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Home Railway Dividends

TWO of the British railway dividend statements made this week are particularly noteworthy in signifying the resumption of distributions on ordinary stocks which had received no dividend for at least four years previously. As announced on Monday, a dividend of ½ per cent. is to be paid on the £31,490,242 deferred ordinary stock of the Southern Railway Company for the year 1936. This stock had received nothing since the 1¼ per cent. paid for the year 1930. The L.M.S.R. statement issued on Wednesday shows that 1¼ per cent. is to be distributed for the year 1936 on the £95,202,441 of ordinary stock, on which the last previous payment was ¼ per cent. for the year 1931, and even that was made possible only by an appropriation of £495,904 from reserve. Both these declarations are in accordance with general expectations. On Wednesday also came the Great Western announcement of a final dividend of 2¾ per cent., making 3 per cent. for the year, on the consolidated ordinary stock; this distribution was expected, but its realisation entirely from the year's earnings was a pleasant surprise. The Southern deferred ordinary dividend requires £157,451 which is being paid out of earnings subject only to a cut of £5,066 in the carry forward. For the L.M.S.R. ordinary dividend the amount required is £1,190,300, which is being provided by a reduction of £56,000 in the amount to be carried forward. Great Western net revenue is £864,271 higher, at £6,314,830, and this has enabled the ordinary dividend, requiring £1,287,892, to be paid without the aid of profits on realisation of investments or of appropriations from contingency fund, leaving £32,421 more to be carried forward.

* * * *

The Factories Bill

The new Factories Bill, which is before the House of Commons, is of particular importance to the railway companies having regard to the numerous railway establishments coming within its scope. The Bill, which is both a consolidating and a revising measure, proposes to revise the present law in conformity with modern standards and many of the clauses have been framed in the light of discussions between the Home Office—which sponsors the Bill—and representatives of employers and workers. This measure proposes to abolish the distinctions which exist in the present law between factories and workshops—distinctions which, in the past, have sometimes been the subject of dispute. The one term "factories" is to be used and a revised definition of "factory" is set out, while the extension to building operations and engineering works is new. The existing law relating to the hours of employment of women and young persons is to be revised. The main features of the new scheme are a normal maximum weekly limit of 48 working hours, a daily maximum limit of 9 working hours and a maximum period of employment (inclusive of intervals for meals and rest) of 11 hours, to be fixed by the occupier between the limits of 6.0 a.m. and 8.0 p.m. (on Saturdays 6.0 a.m. and 1.0 p.m.). Special provisions are also prescribed for the working of overtime and no overtime will be permissible in the case of young persons under 16 years of age. Important changes are made in the health, safety, and welfare sections and many new provisions are introduced, being designed to fill up gaps disclosed by experience.

* * * *

The Week's Traffics

In the 1936 week with which the latest traffic figures of the four group companies make comparison coal class traffics continued on the whole to expand on account of the cold weather, although a settlement had been reached in the coal dispute, the fear of which had previously caused the exceptional coal consignments. For that week the L.N.E.R. had an increase of £16,000 in coal and one of £12,000 in merchandise, the corresponding increases on the L.M.S.R. being £8,000 and £20,000. The Great Western in the same week was £12,000 up in merchandise, but £1,000 down in coal. To date in the present year the passenger train increases are: Southern £38,000, L.M.S.R. £18,000, and L.N.E.R. £17,000, whereas the Great Western has a decrease of £2,000. In merchandise the L.M.S.R. is £76,000 up, the Great Western has a gain of £23,000, and the L.N.E.R. one of £6,000.

	5th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	
	£	£	£	£	£	%
L.M.S.R. ..	+ 5,000	+ 7,000	+ 11,000	+ 23,000	+ 31,000	+ 0·56
L.N.E.R. ..	+ 2,000	− 9,000	− 15,000	− 22,000	− 60,000	− 1·44
G.W.R. ..	+ 4,000	—	+ 11,000	+ 15,000	+ 4,000	+ 0·18
S.R.	+ 10,000	− 3,000	− 5,000	+ 2,000	− 6,000	− 0·36

The Great Northern Railway (Ireland) has to date a decrease of £5,300, and the Great Southern one of £2,359.

* * * *

Southern Pacific Lines

The Southern Pacific Company controls, by stock ownership or under lease, an extensive system of railroads, extending from San Francisco to New Orleans, and thence by steamship services to New York, together with lines from San Francisco to Portland (Oregon), Utah, &c. There was a marked improvement during the year 1935 in

business conditions generally in Southern Pacific territory. Financial results of Southern Pacific Lines (Southern Pacific Company and transportation system companies) are shown in the accompanying table:—

	1935	1934
	$	$
Railway operating revenues ..	163,381,512	149,192,709
Railway operating expenses ..	123,898,159	113,579,216
Net revenue from railway operations	39,483,353	35,613,493
Net railway operating income ..	20,319,880	17,003,658
Income available for fixed charges	32,925,132	31,413,901
Fixed charges	30,578,542	31,005,676
Net income	2,346,590	408,225

Dividends of 6 per cent. on the common stock of the Southern Pacific Company were paid from 1924 to 1931. For 1932 1 per cent. was paid, but nothing has been paid since. The route-mileage operated by Southern Pacific Lines at December 31, 1935, was 13,209, against 13,232 at the end of 1934.

* * * *

Overseas Railway Traffics

At this time a year ago the Buenos Ayres Great Southern Railway had a decrease of £275,755 in its gross traffics in comparison with the 32 weeks of the financial year 1934-35. By the advance of £163,759 in its receipts during the past fortnight it has now succeeded in passing the figures for 1934-35. The increase on the Central Argentine for the past two weeks is £97,752, and that of the Buenos Ayres & Pacific for the same period is £35,863. On the Buenos Ayres Western the improvement during the fortnight has been £25,300, and the Cordoba Central and Entre Rios have made advances of £9,380 and £10,281 respectively. Some improvement continues to be made on the Leopoldina which is £14,299 to the good in its traffics for the first six weeks of the present year, but the Great Western of Brazil is £6,500 down for the same period, and the San Paulo has a decrease of £3,542 for the five weeks.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
		£	£	£	£
Buenos Ayres & Pacific ..	32nd	116,005	+ 18,530	2,668,715	+ 177,249
Buenos Ayres Great Southern ..	32nd	249,876	+ 80,234	4,291,147	+ 288,8'9
Buenos Ayres Western	32nd	61,476	+ 12,327	1,488,353	+ 116,023
Central Argentine	32nd	186,313	+ 54 539	4,691,355	+ 834,363
Canadian Pacific	5th	650,400	+ 30,000	2,038,800	+ 174,000
Bombay, Baroda & Central India	43rd	337,125	+ 66,825	7,203,300	+ 434,250

The increase shown above for the Canadian Pacific is for the ten days ended January 31.

* * * *

Argentine Co-ordination of Transport Bill

On page 73 in our issue of January 8 we gave a brief outline of the principal provisions of the Argentine (National) Co-ordination of Transport Bill, and on page 155 in the issue of January 22 were published some notes on the passage of the Bill and the modifications to which the original draft of the measure had been subjected. Now, however, we are able to give the provisions in greater detail, and they will be found embodied in an article on page 294 in this issue. There seems little doubt that the reason why the Senate delayed so long the passing of this, the second Transport Bill—as opposed to the Buenos Aires local transport measure—was its desire to await the renewal of the Roca-Runciman Pact, in order to avoid being accused of pandering to the wishes of the people in Great Britain with that end in view. Even when introducing the Bill, the Minister of Public Works considered it necessary to refute the arguments put forward by the opposition that to pass the Bill was to pander to British railway capitalists. The composition of the National Commission of Transport Co-ordination is now revealed, and it appears that only one of the seven members will represent all private railway interests of whatever nationality, and he will be nominated by the Government from a list of candidates selected by the respective entities. In view of the capital sum involved and the percentage of the total transport of the Republic carried by these railways, it can hardly be said that they are over-represented on the commission.

* * * *

"Go Slow" on London Tubes

For seven days beginning Thursday, February 4, trains were subject to some delays during peak hours on the Morden-Edgware and Bakerloo tube lines. These have not been serious in themselves, but have caused some inconvenience to passengers owing to the intense service of trains run during peak hours. Officially, neither the London Passenger Transport Board nor the men's union had any knowledge of the delays except that they were occurring. We gather, however, the board has been informed unofficially that the drivers were making a "go slow" protest against the prevailing method of notifying them of speed limits. At present signs are painted on the head wall of station tunnels reading, for example, as follows—"285 yards: speed 15 miles." This means that 285 yards ahead the driver will enter a section of the line in which the speed is limited to 15 m.p.h. The method has been in use for thirty years and has worked satisfactorily. Some time ago the men asked for signs to be installed nearer the sections of limited speed, and such signs would have to be illuminated. Officials of the board do not consider that such signs are necessary, but experiments have been conducted with a view to devising a satisfactory illuminator sign, and a test lamp—the third—was installed only about a fortnight ago. Significant facts are that "go slow" tactics were employed on only two lines and that the action was taken by the men without the support of their union. We gather that an amicable settlement regarding speed restriction signs has been reached, and endeavours to produce a satisfactory illuminated sign are being continued.

* * * *

Lock-and-Block on German Single Lines

In Germany, as in some other Continental countries, token systems of working are not met with, lock-and-block being used on single lines of any importance. For some time there have been two forms officially recognised for general use, known as types A and B, which are based on the methods adopted on the former Prussian lines. The a.c. block units used for double-line block were ingeniously combined to produce the desired effects. The type B apparatus, which requires 3 line wires, is the simpler but possesses the disadvantage that if a train is signalled forward and eventually does not require to go, the instruments must be opened to restore them to normal. The type A, which has 5 block units at each station instead of 3 and requires 4 wires, allows of cancellation as long as a starting signal has not been cleared. It is possible with it provisionally to accept a train while an opposing one is in section, on a principle also known with telegraph working in India. The apparatus is, however, rather complicated where an intermediate block post exists, and is dearer than type B. With both types all starting signals stand locked. Recently a 3-unit apparatus, called type C, developed by signalling officers at Munich, has been sanctioned for provisional use on certain sections, where it is said to give every satisfaction. It has the cancelling feature of type A but not the "provisional line clear" feature, and differs from type B in having the starting signal for one direction normally free.

XUM

History of the Locomotive Turntable

In the paper he read before the Institution of Locomotive Engineers on January 27, entitled "The Development of the Locomotive Turntable," Mr. J. A. Wilkins gave some interesting information regarding early designs. A primitive type of turntable referred to as having been used on a railway in the United States consisted of a cantilever girder with wooden uprights suitably braced to take compression loads, and to these were connected wire ropes to take the tension. This type was intended to obviate the use of a deep pit. Turntables built in the early days of railways were either of the centre balanced type, or unbalanced. Although the centre balanced tables were of simple construction and light weight, they were often expensive to maintain owing to sinking of the foundations of the centre pivot and runner rails. This, of course, was before the use of reinforced concrete construction. Bricks were used for the side walls and for supporting the centre pivot, and in some cases timber was made use of for the track rail support. Small unbalanced tables were used, in which the load was distributed over both the centre pivot and the end wheels. These were more easily constructed than the balanced type, and were driven either by hand gearing, working on a rack and pinion, or by the adhesion of one of the carrying wheels on the track rail. The author stated that there are still about 40 of these hand-gear-driven non-balanced turntables in service on the G.W.R.

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Standardisation of Turntables

Another matter to which the author devoted attention in the paper referred to above was the size and capacity of turntables. In the last few years standardisation of locomotive types has proceeded rapidly in many countries, resulting in a reduction in the number of types in use, with a consequent reduction in manufacturing and working costs. In Germany, the State Railway authorities have for many years standardised, as far as possible, the sizes and capacities of turntables used; and in France, Holland, and elsewhere progress in this direction has also been made. In this country not much advance has been made towards that end, except that modern tables appear to be limited to 60, 65 and 70 ft. in length. On the French State Railways, turntables of 14, 17, 20, and 23·5 metres are standardised, whilst in Germany the tables are of 20-23 metres in diameter. The Netherlands lines have adopted 20 and 24 metres for new tables, and in all of these a standard size of electric or compressed air motor is used according to the size and type of the table. The same tendency is seen in Australia, where the Victorian Railways are now using 85-ft. continuous girder tables in place of the 70-ft. balanced type previously used. It is interesting to note that the same centre casting and ball bearing pivot is used on the larger table as on the smaller, originally designed in the year 1910.

* * * *

Stresses in Permanent Way

In view of the present experimental use of flat-bottomed permanent way in the main lines of one of the four group railways in this country, and of its almost universal use elsewhere, the results of the research work now being carried out by the Indian Railway Board to ascertain the stresses in this type of permanent way under varying conditions are likely to be of more than ordinary general interest. Also on page 271 we review a paper on stresses in fishplates and rails that is of special interest for the same reasons. This paper is the direct outcome of a proposal of the Railway Board to consider the dynamic as opposed to the static loadings when sanctioning the use of a particular type of locomotive on a given road, the former method being based on the sum of the static wheel load and the wheel hammer blow at the maximum speed proposed. As the rail joint is admittedly the weakest point in any track, the paper proceeds to investigate the fishplate stresses in the standard and in suggested improved sections of rail and fishplate, produced by the heaviest type of State Railway passenger locomotive, so that the stresses in rail and fishplates can be compared. The paper also establishes that the fishplate stress is so high in existing designs that it should in future have a much greater influence on the design of both rails and fishplates. Based upon so widely used a type of track as the 90-lb. flat bottomed section, the carefully calculated results of the paper are of direct interest to many, and are in such full detail that they can easily be adapted for use with other sections of rail and fishplate.

* * * *

A Slide Valve of 1899

The reference on page 132 of our issue dated January 22, in an article on the late Sir John Aspinall, to the type of slide valve fitted by him to some of his 4-4-2 express engines of the "1400" class, has brought enquiries from readers for details of this valve, which was described as a "balanced slide valve specially designed to facilitate the escape of the exhaust steam." We are able to satisfy these enquiries by reproducing on page 276 this week a sectional drawing, kindly provided for the purpose by Mr. W. A. Stanier, showing the details of the valves referred to. These were of the open- or hollow-backed pattern, made of bronze and working in a horizontal plane; they were balanced by preventing the steamchest pressure from acting over the areas corresponding to the port openings. Cast-iron strips were provided, held against the port faces, as shown in the drawing, by flat springs arranged in the transverse and longitudinal directions. The slide valves, being hollow, allowed the exhaust steam to pass freely through a port opening at the back of the valve direct to the blast pipe. They were used in conjunction with steam jacketed cylinders, and derived motion from valve gearing of the Joy radial pattern.

* * * *

German Standard Locomotives

During the last few years large numbers of standard locomotives have been built for the Reichsbahn, and most of the principal fast main-line trains are now hauled by one or other of the two very efficient standard Pacific types. In general they are of similar design, but one, the 03 series, is slightly smaller than the other (01 series) to enable it to work over lines incapable of withstanding the heavier and more powerful type. Very similar in main dimensions to the Pacifics are the standard 2-8-2 passenger engines, the essential difference being in the wheel arrangement and the slightly smaller diameter of the coupled wheels. These locomotives are used chiefly on the more heavily graded sections. Standardisation in Germany has not cramped design, as is obvious from a study of its development, but it has ensured the use of the components proved by practice to be the best, and of uniform pattern wherever possible. This is exemplified by the 02 and 04 series, similar in general design to the 01 but having four compound cylinders, and the latter differing from the former in having a working pressure of 350 lb. per sq. in. The other main types standardised by the Reichsbahn for multiplication are 2-6-0 for local passenger traffic, 2-10-0 for heavy goods, and a range of tank engines from small 0-6-0 and 2-4-2 to very large 4-6-4 and 2-10-2. There is an obvious family likeness between every one of these various standards

XUM

Indian Railways in 1935-36

IT is doubtful whether the annual report of the Indian Railway Board for the year ended March 31, 1936, which has just been published, will afford much help to Sir Ralph Wedgwood and his committee in their investigations into the possibilities of placing the Indian railways on a more remunerative basis within a reasonably short time. The gross traffic receipts from all State-owned lines went up from £67,650,000 to £67,987,500, a paltry £337,500 increase, to which, however, improvements in both goods and coaching earnings contributed. The corresponding working expenses rose by only £97,500, so that the net operating gain was £240,000. Interest charges fell by £307,500, and the net deficit by £802,500, bringing the total sum to be met from the Depreciation Reserve Fund down to £2,990,000. For a year when crop conditions were more or less favourable, and trade as a whole showed signs of improvement, these results, though expected, are frankly disappointing. The one bright spot is the improvement in the operating ratio, an improvement that has been going on steadily for the past five years.

The total earnings of all railways, including those with which the Government of India is not directly concerned, amounted to £78,000,000. Of this total, £48,750,000 (62 per cent.) was from goods traffic, £23,250,000 (30 per cent.) from passenger traffic, and £6,000,000 (8 per cent.) from parcels, luggage and other miscellaneous sources. The railways continued to explore the possibilities of increasing earnings and reducing expenses, and to this end the following were some of the steps taken during the year:—

(1) Changes in rates and fares, a fairly appreciable number of these being to meet road competition and to encourage traffic by railway; (2) appointment of canvassers for attracting traffic to railways and special arrangements for quick and safe transport of particular commodities; (3) elimination of inter-railway competition; (4) general improvement of the train services; (5) special test checks of invoiced weights and descriptions of goods consignments; (6) job analysis of various railway activities; (7) examination of handling rates resulting in reduction at certain stations; (8) introduction of railcars with lower operating costs on certain sections; (9) introduction of single control of train examination at joint stations; and (10) amalgamation of certain running sheds.

The total capital at charge, including lines under construction, amounted to £660,000,000, of which £591,750,000 pertained to State-owned railways and the balance of £68,250,000 represented capital raised by Indian States, companies and District Boards. The total capital outlay on all railways during the year amounted to £2,497,500, the expenditure on State-owned railways being £1,935,000. Of this latter total, the expenditure on new construction, open line works and purchase of railways was £217,500, £1,387,500 and £330,000 respectively. On Class I railways, passenger-miles increased by 366 millions and freight ton-miles by 226 millions as compared with the corresponding figures of the previous year. The average net or freight load of goods trains rose from 391 tons to 393 tons on the broad gauge, but fell on the metre gauge from 174 to 171.

The total route mileage of all Indian railways open on March 31, 1936, was 43,118, of which the State-owned mileage was 31,783 or about 74 per cent.; 111 miles of additional lines were opened for traffic during the year, and 63 miles were under construction at its close. The question of overcrowding in third class carriages continued to receive constant attention. A census of the number of passengers actually carried in third class carriages is taken on all railways during the period of the year when traffic is normally at its peak, in order to ascertain to what extent there is overcrowding. The results of the census taken during the year under review showed that the stock provided was generally sufficient and cases of overcrowding were comparatively rare.

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Valencia Government and the Railways

UNDER a decree dated December 26, 1936, signed by President Azana and published in the *Gazette of the Republic* of December 27, the State takes over all the smaller railways of all gauges not covered by the Decree of August 3, 1936, which it will be remembered, provided only for the working of the five principal broad gauge systems—the Northern of Spain, Madrid Saragossa Alicante, Andaluces, National Western, and Central Aragon. The preamble to the new Decree states that while the working of the main railway system has already been provided for in previous governmental dispositions, there remains a number of smaller lines, the working of which requires co-ordinating for the improvement of the transport work of the campaign, and in the interests of the nation generally. The following is an outline of the framework of the Decree:—

Article 1 says that the State takes charge provisionally of the whole of the railway system, of whatsoever category or gauge, which is not already provided for under the Decree of August 3.

Article 2 authorises the Minister of Public Works to decide which of the railways are to come under the control of the mixed committee appointed by the Decree of August 3, and which are to continue to be worked by the General Direction of Railways, or by any other organisation created for that purpose.

Article 3 lays it down that the measures taken are without prejudice to the rights of the State under the General Railway Law of November 23, 1877, and the law of May 10, 1932, as well as the Secondary Railways Law of March 26, 1908, modified by that of February 23, 1912.

Article 4 provides that while this decree continues in force, the railways with a guarantee of interest, which have not benefited by the decree of September 22, 1917, may consider as a working receipt 15 per cent. of the total of the guarantee, and the Government will decide as to the disposal of the remainder.

Article 5 authorises the General Direction of Railways to assume control of all the lines until such time as they shall have been regrouped as provided for in Article 2; and

Article 6 decrees that the General Direction of Railways shall report on "the possibility of subsistence of each of the small railways," and shall provide for the measures to be adopted in each case, and especially for those in which the working may have to be suspended, so as to insure that the employees shall not suffer prejudice in the receipt of their pay.

This decree thus regularises, at any rate to some extent, the position of the small railways in Spain, and provides for their control by the public authorities, instead of by the self-appointed workers' committees, who seized the properties on the outbreak of civil war in July last year. Some of the more important of the smaller lines will now pass under the mixed committee appointed by the Decree of August 3, 1936, a measure which was fully described in our issue of August 28 last. The State Commissars of Railways, who have exercised a certain amount of supervision, have not hitherto been able to give direct orders, and control from Madrid has been exercised only as a condition of advancing funds or credits for coal and materials. One effect of this new decree will be to regularise the situation of certain of the smaller railways owned by interests outside Spain, among which there are at least two British-owned lines. In this respect, however, the decree is carefully

drafted so as to protect the rights of the State under the old railway law and the "Prieto" law of 1932, and it remains to be seen how this will affect the claims which will undoubtedly have to be made, through the proper channels and at the proper time, for compensation or redress. All that can be said at present is that the position is certainly clearer in this respect than when the railways were in the possession of the irresponsible heads of the local labour syndicates. Obviously, the Decree applies in practice only to the railways in that part of the country under the control of the Valencia Government.

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Road Motor Vehicle Census

THE Ministry of Transport census of mechanically propelled road vehicles licensed pursuant to the Roads Act, 1920, which was published recently, contains some comprehensive statistics showing the extremely rapid growth which has occurred in their numbers since 1928. Thus, while the total number of goods and passenger vehicles for which licences were current at any time during the quarter ended September 30, 1928, was 2,052,539, this figure had risen by September 30, 1936, to 2,768,606, an increase of no fewer than 716,067 vehicles or 34·9 per cent.

Goods Vehicles

With regard to goods vehicles other than agricultural vans and lorries and showmen's special vehicles, the licences current during the September quarter of 1936 totalled 445,455, an increase of about 23,000 over the comparable period of 1935 and a rise of nearly 143,000 since 1928. The detailed statistics given in the census show that there has been a steady increase in the number of these vehicles annually since 1928. The highest increase in any one year was 23,701 vehicles between 1928 and 1929, while the increase of 23,105 between 1936 and 1935 was the next highest figure. To what extent this continuous increase in the number of road vehicles is attributable to the activities of "C" licence holders cannot be determined until the next report of the licensing authorities is published. Of the 445,455 goods vehicles mentioned above, 441,184 or 99 per cent. were fitted with internal-combustion engines; 1,671 or 0·4 per cent. were steam driven; and 2,600 or 0·6 per cent. were electrically propelled. This represents, compared with 1935, an increase of 22,800 internal-combustion-engined vehicles, a decrease of 410 steam driven, and an increase of 715 electrically-propelled vehicles. An analysis of the internal-combustion-engined vehicle returns shows that 435,028 used light oil, 6,149 heavy oil, and 7 coal gas—the last-named figure is a decrease of 50 per cent. compared with the previous year. The number of those using heavy oil was 732 greater than those in 1935 but it is noticeable that there was a decline in the number of those under 2½ tons and increases in those up to 4 tons, 6 tons, and over 6 tons respectively. A division of the internal-combustion-engined vehicles according to their unladen weights shows that, compared with 1935, those not exceeding 12 cwt. increased by 11,487 or 26·7 per cent. in 1936 while those between 2 tons and 2½ tons increased by 19,851 or 34·5 per cent. On the other hand there was a substantial decrease in the number of vehicles between 12 cwt. and 1 ton, and between 1 ton and 1½ tons. Figures are also given of the vehicles newly registered during the twelve months ended September 30, 1936, and these indicate that the number of goods vehicles, other than agricultural vans and showmen's special vehicles, was 75,991 as compared with 67,339 in the previous year and 50,713 in 1929. Of the 1936 total, over 69,000 were under 2½ tons in weight and these included over 16,000 light vehicles not exceeding 12 cwt., an increase over 1935 of about 3,500.

Passenger Vehicles

Cars taxed on horsepower represent the largest proportion of the total vehicles for which road licences were current at any time during the quarter ended September 30, 1936; the number was 1,642,850 as compared with 1,477,378 in 1935. This is the highest figure so far recorded, and compares with the total in 1928 of 884,645.

Number of Mechanically-propelled Road Vehicles for which Licences were Current at any time during the Quarter ended September 30

Year	Cars taxed on horse-power	Motor cycles	Goods vehicles			Hackney vehicles		Other vehicles	Total
			Agricultural vans and lorries	Showmen's special vehicles	Other goods vehicles	Other than Tram-cars	Tram-cars		
1928 ..	884,645	712,583	2,011	1,227	302,506	95,412	13,945	40,210	2,052,539
1929 ..	980,886	731,298	2,164	1,423	326,207	97,997	13,880	41,857	2,195,712
1930 ..	1,056,214	724,319	2,201	1,568	344,672	101,131	13,665	43,556	2,287,326
1931 ..	1,083,457	626,649	2,142	1,718	356,754	87,464	13,014	42,524	2,213,722
1932 ..	1,127,681	599,904	2,185	1,737	366,178	84,950	12,468	44,464	2,239,567
1933 ..	1,203,245	562,656	2,490	1,788	383,209	85,077	12,000	46,861	2,297,326
1934 ..	1,308,425	548,461	7,848*	1,874	403,598	85,129	11,516	50,057	2,416,908
1935 ..	1,477,378	516,567	10,364	2,009	422,350	85,547	10,872	55,940	2,581,027
1936 ..	1,642,850	505,779	11,603	2,169	445,455	86,009	10,260	64,481	2,768,606

* In 1934 many vehicles previously declared as "goods" were transferred to "agricultural," as a preferential rate of duty for the latter class became applicable in that year

Number of Vehicles Newly Registered during the Twelve Months ended September 30

Year	Cars taxed on horse-power	Motor cycles	Goods vehicles			Hackney vehicles (other than tram-cars)	Miscellaneous vehicles	Total
			Agricultural vans and lorries	Showmen's special vehicles	Other goods vehicles			
1929 ..	167,517	84,806	188	12	50,713	10,716	5,059	319,011
1930 ..	153,655	77,521	176	11	52,183	9,716	5,494	298,756
1931 ..	141,392	54,644	162	13	51,562	8,591	5,482	261,846
1932 ..	143,053	49,017	191	2	45,751	5,705	5,289	249,008
1933 ..	178,574	40,116	168	—	49,431	3,763	5,325	277,377
1934 ..	215,526	44,734	619	6	65,743	4,923	6,491	338,042
1935 ..	266,619	46,036	925	2	67,339	6,997	9,570	397,488
1936 ..	295,967	53,387	994	—	75,991	7,529	15,471	449,339

XUM

Motor cycles totalled 505,779 in 1936, as compared with 516,567 in 1935, and 712,583 in 1928. The total number of hackney vehicles other than tramcars in 1936 was 86,009, an increase of 462 or 0·5 per cent.; and of the total 2,688 were six-wheeled, four were eight-wheeled, and 49 were fitted with solid tyres. The growing popularity of the diesel engine for passenger road vehicles may be gauged from the fact that those using heavy oil rose by 3,000 compared with the previous twelve months, while those using light oil declined by a similar number. Nearly 6,600 hackney vehicles are owned by the London Passenger Transport Board, and the number of those owned by local authorities rose from 7,406 in 1935 to 8,165 in 1936. An examination of the figures relative to the seating capacity of the vehicles indicates that for the second year in succession there has been a decrease in those vehicles seating under 26 persons, while the largest increase occurred in those seating between 32/40, 48/56, and more than 64 persons respectively.

Other Vehicles

The number of vehicles other than those mentioned above rose from 40,210 in 1928 to 55,940 in 1935, and 64,481 in 1936. During the twelve months ended September 30 last, Government-owned vehicles increased from 19,499 to 24,080; agricultural engines rose from 18,978 to 22,123; road rollers from 6,940 to 7,352; ambulances from 3,414 to 3,569; fire engines and fire brigade vehicles from 2,414 to 2,506; and tractors from 2,704 to 2,789.

* * * *

Rail Transport of Coal

IT was unfortunate that the reading last Monday at the Institute of Transport of the paper by Mr. C. E. R. Sherrington on the transport and distribution of coal at home and abroad coincided with an annual function of the coal trade. As it was, only one speaker, in the debate which followed the paper, put forward views that could be regarded as justifying the present condition of affairs. Mr. Sherrington stressed the importance of coal movement to the welfare of transport concerns in Great Britain, notably the railways, and had little difficulty in showing that the urge to move coal to the Tyne and the Wear had been among the most potent forces working for the development of steam locomotive traction; the prime function of many early lines abroad, too, such as the Carbondale & Homesdale in the U.S.A., was the conveyance of coal. In 1935, of a total coal production in Great Britain of nearly 222¼ million tons, no less than 175 millions were handled by the British railways, forming as much as 64½ per cent. of their total tonnage, 50 per cent. of their ton-mileage, and 20 per cent. of railway receipts. Though the movement of coal is important to the railways in other countries, notably Germany, where it amounts to 40 per cent. of revenue tonnage, the British railways have the double task of catering for a large export coal movement, and for the requirements of landsale coal. How heavily the British coal export trade has suffered may be seen from the fall from over 61 million tons in 1929 to under 40 million tons in 1935; the author drew attention to this long continuing trend, and characterised it as "permanent and inexorable." In view of the steadily growing network of electrified lines in Continental Europe using home-produced water power and eliminating imported coal, it would certainly seem that the outlook for British export coal is not bright. That the trend is continuing cannot be denied; the present Italian electrification programme, when completed, will avoid the importation of an existing demand for a million tons; the recent British credit to the French railways will allow the more rapid conversion of two main lines to electric traction, thereby further reducing the demand for British coal.

Though the paper was replete with figures relating, for instance, to the average capacity of rolling stock conveying coal in other countries, the author was careful not to advocate the use of high-capacity wagons in this country, though it was hinted that more extensive use might be made of the 20-ton vehicle which may be regarded as standard on Continental European railways. Several examples of remarkably fast shuttle train services conveying coal were mentioned, such as those operated with high-capacity set trains between Silesia and Berlin and Béthune or Lens and Paris, and we have ourselves drawn attention to the latter in these columns. As was pointed out, the almost universal employment of air brakes abroad has enabled many of the heavy coal trains to be speeded up very considerably. In this connection the activities of the Westinghouse Brake & Signal Co. Ltd. (whose meeting is reported on page 295) in equipping the goods rolling stock of Poland is contributing to the acceleration of the 2,000-ton coal trains between Upper Silesia and Gdynia. The use of small privately-owned wagons with their multitudinous ownership and great variation in age prevents similar fast schedules in this country, and we endorse the plea contained in the paper for more up-to-date figures than those which are to be found in the first report of the Standing Committee on Mineral Transport. As a member of that committee himself pointed out at the meeting—and the point was stressed by the Chairman, Mr. Ross Johnson—the recent work of the committee seems to be enshrouded in an impenetrable haze, and Mr. Sherrington's paper is timely in focusing attention on the problem once again.

So much has been written from time to time on the high cost of coal movement in Great Britain that it is useful to have on record authoritative figures with regard to the length of haul and other conditions affecting the cost of movement abroad; for instance, the average haul of coal in Germany has now risen to almost 100 miles, and in the United States it is well over 300 miles. It is well known that the shorter the haul the higher will be the ton-mile charge, but with export coal travelling very short distances in this country, it would seem that so far as transport costs are concerned, the British producer enjoys a great advantage over his foreign competitor, since the rate per ton will be lower than that paid abroad, even though the rate per ton-mile will be higher at the 1d. which has been its approximate level since 1923. The author did not paint a bright picture for the future of coal exports, and, as we have previously pointed out, export coal is not now benefiting as much from the Freight Rebate Scheme as it has done in the past. On the question of subsidies for export coal, there are fundamental differences of opinion, but few will deny that the prosperity of the railways in Great Britain is likely to be bound up for some time to come with the degree of prosperity obtaining in the coal mining industry. The Institute of Transport has not numbered among its proceedings many papers on this important subject, and it is to be hoped that this paper will once again serve to draw attention to the urgent necessity for improving by every means available the methods applying to the rail transport of coal in this country.

Oxford & Aylesbury Tramroad Company.—This company has presented a petition for its winding up, and this will be heard on February 22. The company was incorporated in 1883; took over in 1894 the working of the Wotton Tramway (Quainton Road to Brill); and rented this to the Metropolitan Railway in 1899. It was closed by the Met. & G.C. Joint Committee on December 1, 1935.

PUBLICATIONS RECEIVED

Investor's Pocket List of Reference Tables, 1937. London : Fredk. C. Mathieson & Sons, 16, Copthall Avenue, E.C.2. 6½ in. × 3½ in. 14 pages. Limp cloth. Price 1s.—Much information useful to investors will be found in this handy list. A perpetual yield table, a table for calculating yields on £1 shares, stamp duties on transfers and contract notes, income tax at 4s. 9d. in the £, income tax for investors, fractions of £1 in money and decimals, dividend and interest table for £1, 10s., and 2s. shares, and the official minimum scales of brokers' commissions, etc., will save the investor much time and trouble in calculations.

The Drawing Office Handbook. Second Edition. By A. B. Cartwright. London : The Drawing Office Material Manufacturers' and Dealers' Association, 168-169, Windsor House, Victoria Street, S.W.1. 8¾ in. × 5½ in. 279 pp. Price 5s. 0d. net.—The Drawing Office Material Manufacturers' and Dealers' Association, in preparing the second edition of this useful handbook, has revised and brought up to date the text matter contained in the first edition. The book is divided into five sections, namely, Digest of the British Standard and foreign specifications ; Design formulæ ; Springs ; Strength of Materials ; and Electrical Equipment. The last section is an addition since the publication of the first edition. Under these headings the pertinent formulæ, rules, tables, and data are arranged in a handy and concise form which facilitates reference. Where necessary, neatly-executed line drawings illustrate the text. Of particular interest to railway engineers will be the section on springs written by the well-known authority, Mr. T. H. Sanders.

The Blue Book : The Electrical Trades Directory and Handbook, 1937. London : Benn Brothers Limited, Bouverie House, Fleet Street, E.C.4. 9½ in. × 6 in. × 3 in. 1,390 pp. Price 25s. net.—This well-known reference work, which is now in its 55th edition, provides a comprehensive directory to the electrical industries. In various sections are the names and addresses, telephone numbers, and telegraphic addresses of every important organisation, firm, and person engaged in the generation of electricity or the production and marketing of electrical goods for any purpose. Suppliers of raw material or semi-finished products for the industry are listed, as are most of the large engineering firms which are extensive users of electricity. Generation and transmission of energy are fully covered, and brief particulars are given of the chief electric transport undertakings. By means of thumb-tabbed index cards and careful sectionalising, the mass of information thus assembled is made easily available for rapid reference. To the business man interested in the purchase or sale of goods involving the use of electricity the classified trade lists are of obvious value, and the tables of electrical data, the detailed particulars of electrical services like telecommunication in its many aspects, the Grid, and the financial section are of service both to the commercial and the technical administrator. Apart from the main division covering Great Britain and Northern Ireland, two other divisions cover the British Empire and the United States of America.

Stresses in Fishplates for 90-lb. Rails (with conclusions affecting the design of Standard Rail and Fishplate Sections). By A. M. Sims, B.Sc.(Eng.), Assoc. M.Inst.C.E., Track Supply Officer, North Western Railway, India. Delhi : Indian Railway Board. —This paper has been prepared with such evident care and in so great detail that permanent-way engineers can ascertain the probable effect of any locomotive on any rail with its existing or proposed fishplate ; the paper is therefore of wide general value. Further remarks upon it will be found in an editorial note on page 267.

The paper provides an example in full detail of the working out of the stresses in 90-lb. flat-footed rails and fishplates, as used in India. The method used for ascertaining fishplate stresses is on the lines of that given in the Bulletin of the American Railway Engineering Association, Volume 31, No. 319 of September, 1929. The American method for determining rail stresses has been adopted by the Indian Railway Board pending results of extensive research into the stresses in rails and fishplates at present being carried out by engineers attached to the Standardisation Branch of the Railway Board's office.

Actual determination is given of the five factors of static wheel load, speed or impact effect, hammer blow due to "out of balance" weights in the coupled wheels, steam effect on driving wheels through the connecting rods, and effect on driving wheels of acceleration and deceleration of the reciprocating parts through the connecting rods. It is shown that the last two factors may be neglected, but the hammer blow is about 10 per cent. and the impact effect 30 per cent. of the "adjusted" wheel load at 60 m.p.h. for the locomotive considered. Figures used for the elastic modulus of the track arrived at by experiment were 1,313 and 1,657 lb. per lineal in. of rail per inch of track depression for 90-lb. rails with wooden and steel trough-type sleepers respectively.

The results show that the rail stress may be about 11 tons per sq. in. but the fishplate stress as much as 25 tons per sq. in. Attention is drawn to the fact that such stresses occur momentarily in a cycle of 0·075 of a second during which the stress undergoes complete reversal from compression to tension and back again to compression. No criterion, other than the limit of proportionality, is available for the use of material under such conditions. The desirability is discussed of using higher quality fishplate steel in accordance with the American specification of 31 tons per sq. in. for the yield point.

Finally, new designs for the rail and fishplate sections have been produced with the object of securing the best economic distribution of the metal.

Easter Holidays.—An illustrated programme of Easter holiday tours from Thos. Cook & Son Limited, Berkeley Street, London, W.1, records still further reductions in inclusive prices for Continental holidays. Thanks to favourable exchange, nine days in Switzerland can be enjoyed for £6 19s. 6d., or a similar period on the French Riviera for £7 15s. One of the popular Grand Tour holidays has been arranged for Easter, offering a comprehensive 15-day circuit in Italy, with reserved rail accommodation throughout, for 22 guineas.

Rubber Cables and Flexibles.—Callender's Cable & Construction Co. Ltd. has published a new catalogue of rubber cables and flexibles, made in accordance with the latest C.M.A. standards. All cables listed combine the experience of the past with the latest achievements in scientific research, in which direction the extensive Callender research laboratories are continuously engaged. We have also received from the same firm an illustrated booklet dealing with cables for rural transmission, with special articles on the mechanised laying of underground cables.

Automatic Controls and Recorders.—A pamphlet with the title "To Measure and Control is to Economise" has been issued by Honeywell-Brown Limited, 70, St. Thomas's Street, London, S.E.1, and outlines the fundamental part played by automatic regulators and recording devices in all systems for maintaining air or fluids within certain limits of temperature, pressure, etc. The range of such instruments supplied by the firm is illustrated and described in a loose-leaf catalogue of thermostats, relays, temperature controllers and recorders, pressure and level gauges, and allied apparatus.

Diesel Rollers.—The application of the diesel engine to road rollers is represented in an interesting illustrated catalogue from Aveling-Barford Limited, Grantham. These rollers are made in weights from 5 to 15 tons, and are powered by a single-cylinder horizontal four-stroke diesel engine. Transmission is by chain to a three- or four-speed gearbox, and thence by spur gearing (incorporating a differential) to the rear wheels. Characteristics of the Aveling diesel engine fitted to these units are easy starting, smooth running at all speeds, and low fuel consumption. At normal r.p.m. it develops ample power for the roller to perform the heaviest duties encountered in road construction, including road making on any gradient where it is practicable to make roads.

XUM

THE SCRAP HEAP

KNOCK KNOCK

Mr. C. Johnstone, Liverpool District Passenger Manager, told this one at luncheon at the C.C.M. Conference at Manchester:

Knock, knock!

Who's there?

Ashton.

Ashton who?

Ashton-ishing increase in L.M.S. traffic receipts!

(Which just goes to prove that old adage that many a true word is spoken in jest. — EDITOR, Q.N.) — *From "Quota News"—the journal of the L.M.S. Commercial Department.*

* * *

R.M.S. "ROYAL SCOT"

A novel piece of information appeared recently in the *Daily Telegraph*. It was that the R.M.S. Royal Scot stopped specially at Bletchley in order to pick up the Duke and Duchess of Norfolk *en route* for Scotland. We trust that this famous vessel developed sufficient knots to satisfy all the speed aspirations of the ducal party.

* * *

During 1936 the German State Railway used 13,200,000 tons of coal and carried a total of 1,489,000,000 passengers, or 4,000,000 a day. The total mileage covered by the company's trains was 453,750,000 miles, or nearly five times the distance from the earth to the sun. The Reichsbahn is the largest employer of labour in Germany; approximately 5 per cent. of the country's employables earn their living either directly or indirectly through the railway.

* * *

Then I remembered an old holiday, when I came home from school for Christmas, 1906, and found a first-rate sensation. A wolf had escaped from someone's private zoo, under the Pennines, and was at large in our neighbourhood, and had already killed forty sheep. And, as if that weren't thrill enough, next day at breakfast-time arrived an old railwayman from the village, asking to see my father at the front door. I recall the excitement of that front-door touch; it meant a man-to-man affair: personal urgency. My father went out. Presently, we were told, in confidence, the incredible truth. On the main line, a quarter of a mile away, the old man had found the wolf cut in two. The company would claim the carcass, he said: "but it's on your land, mester, efter all! So Ah just browt ya this along, and neabody ony wiser——" "This" was the wolf's paw, which the old man had unofficially reserved for my father. Sure enough, the company claimed the rest, which was stitched up (like Cassim in "The Arabian Nights," we reminded each other gleefully) and then photographed: a full-grown grey wolf weighing five and a half stone. It was sent down to Derby, where the head is shown to this day. As the old ballad nearly says:—

So if you don't believe me, or think I'm telling a lie,
Just ask for the wolf at Derby, sir, and they'll tell you the same as I!

Moreover, between ourselves and with apologies to the railway company, I have that foot still.—*"A Storyteller on 'Holiday,' by Graham Sutton, in "John O'London's Weekly."*

* * *

Mr. F. E. Baines, sometime Assistant Secretary and Inspector-General of Mails, G.P.O., states in his autobiography: "At 4.45 in the morning, on Saturday, August 1, 1874, the London night mail by coach across the Ord of Caithness arrived for the last time at Thurso. The Highland Railway had long been creeping northwards from Inverness. It had opened its main line to Wick; now it threw out to Thurso a spur from Georgemass. As the dust-covered coach delivered the bags at the door of the post-office, the old order changed. The final road-bags went in at a quarter to five, and at ten minutes past five the first railway-bags came out. That was the end of the working of the longest mail-coach ride out of London, which in 1836 followed rather a circuitous route from St. Martin's - le - Grand, traversed 783 miles, gave employment to nearly 800 horses, and performed the whole distance from post-office to post-office in 3 days and 22 hours."

* * *

CURRENCY CURIOSITIES AT THE BOOKING OFFICE

G.W.R. booking clerks find there are fashions in paying rail fares. On business men's expresses from the Midlands to London and from Plymouth, five and ten pound notes are the vogue, with a smattering of dollar bills at Plymouth.

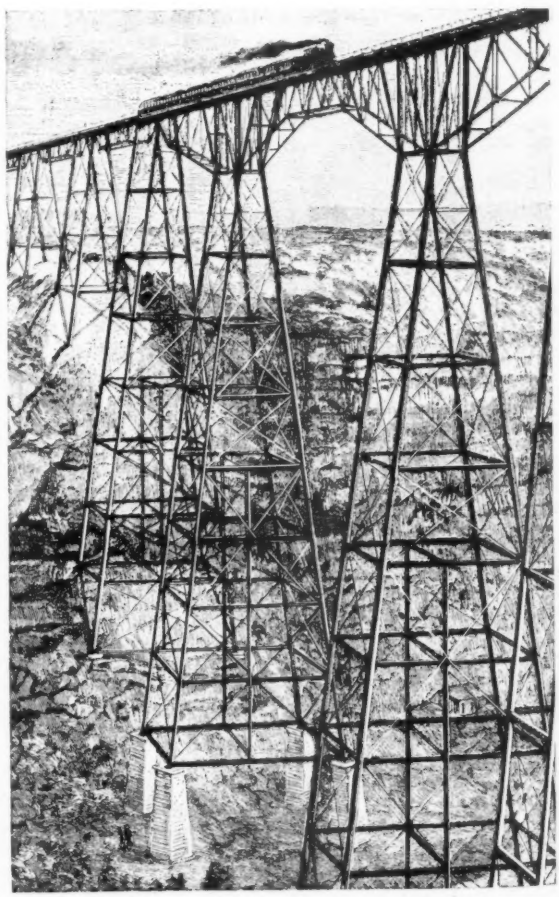
Passengers from Ireland rebooking at Fishguard invariably tender currency notes of the Irish Free State, which have the same face value as those of this country. In Wales the threepenny bit is the most popular coin, and booking clerks at Welsh stations handle hundreds of them daily; an English station may not see one a month.

Of the 7½ million threepenny bits minted annually five millions go to Scotland, two millions to Wales, and only half a million for distribution over the rest of England. Every third person in Wales saves threepenny bits for heydays and holidays, and it has even been known for the entire Sunday School outing from a South Wales town to be paid for in threepenny bits.

England's most popular coin is the sixpence or the shilling, though the half-crown is increasing rapidly in favour. Double florins, massive crowns, and coins minted in the reigns of the early Georges still turn up, but of the sovereign not a sign has been seen since the days before Britain went off the gold standard.

* * *

There is enough salt in the sea to cover all the land 400 feet deep.



What is believed to be the tallest railway bridge in North America is this 330-foot high structure of the Southern Pacific over the Pecos River in Texas. According to the "Erie Railroad Magazine," to which we are indebted for our illustration, this bridge is 2,180 ft. long, 16 ft. wide, and was completed in 1892

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

BRAZIL

Mogyana Railway

The 64th anniversary of the commencement of work on the Mogyana Railway was celebrated at Campinas on December 2. The company was founded, pursuant to a provincial law of March 21, 1872, with a capital of 3,000 contos of reis, divided into 15,000 shares of 200$000 each. The organisers, meeting in the Campinas Municipal Court, elected the first board of directors. On August 28, 1873, the laying of rails was begun, and in 1875, 105 km. of line, joining Campinas to Mogy-Mirim, and Jaguary to Amparo, were opened for traffic. In the latter year receipts amounted to 190 contos of reis. Receipts for the years 1930 to 1935 were as follow:—

	Contos
1930	50,698
1931	51,009
1932	43,331
1933	46,981
1934	43,504
1935	43,986

At present the Mogyana Railway has 1,970 km. of line, 217 locomotives, 321 coaches, 2,931 wagons, and a staff of 6,067. The present administrative body is composed of: Dr. Horacio Antonio da Costa, General Manager; Dr. José Wilson Coelho de Souza, Locomotive Superintendent; Dr. Euclydes Vieira, Chief Engineer; Snr. Reynaldo Loubstein, Traffic Superintendent; and Dr. Odir Costa, Commercial Superintendent.

Touring on the Central Railway

The Central Railway promises various improvements for 1937 in addition to the electrification of the Rio de Janeiro suburban area. Tourists and other interested parties will be able to visit, under special conditions, the vast area covered by this railway in the mountainous State of Minas Geraes. Special low-priced tickets will be issued covering bed and meals on train, hotel accommodation and motor-car excursions. The tourist trains will have scheduled stops, sufficiently long to permit of passengers visiting various places, such as, the celebrated Maquin grottos, the Agricultural Penitentiary of Neves, the famous sculptural works of Aleijadinho in the churches at Sabará, Ouro Preto, Congonhas do Campo and Marianna, the sugar mills at Anna Florencia, Ponte Nova, the installations of the Companhia Siderurgica Belgo-Mineira at Sabará, the manganese mines at Lafayette, and other places noted for their industrial or scenic interest.

A new department, directed by the agriculturist, Hariou, will develop touring, as well as dealing with the economic problem of agricultural and industrial production, and with such an organisation the railway will shortly be able to furnish a wide range of information in regard to the buying and selling of all products. With a view to promoting greater efficiency, the administration of the Central Railway has decided to create an agricultural show train, which will carry specialists to give cinematograph lectures on farming.

CANADA

C.P.R. Air-Conditioning

The 1937 programme of air-conditioning on the Canadian Pacific Railway includes the equipment of standard sleeping, dining, tourist sleeping, parlour, and day cars, to a total of 136 vehicles. This will enable all trains of air-conditioned sleeping and parlour cars to have dining cars similarly equipped, and the tourist cars on the trans-continental services between Toronto and Vancouver and between Montreal and Vancouver to be equipped. Together with the 130 cars air-conditioned in 1936, the C.P.R. will have sufficient coaches so equipped for most of the more important trains on the system by the end of this year. Occasion is taken of the shopping for this equipment to improve the interiors of the cars so as to bring them up to date.

New Bridge in New Brunswick

The Canadian Government has passed an order-in-council authorising the Canadian National Railways to build, at an estimated cost of £310,000, a new bridge over the St. John River at Fredericton, to replace the structure demolished last year by floods and ice-jams.

NEW SOUTH WALES

Railway Commissioner's Report for Quarter ended September 30, 1936

The principal financial details of this report are as follow:—

Particulars	Quarter ended September 30 1936	1935	Increase (+) or Decrease (−)
Miles open	6,124¼	6,163¾	−39½
Revenue:			
Coaching	£1,674,709	£1,590,124	—
Merchandise	£2,375,896	£2,356,531	—
Sale of electrical energy	£193,177	£176,637	—
Total	£4,243,782	£4,123,292	+ £120,490
Expenditure	£2,944,411	£2,831,654	+ £112,757
Train miles run ...	6,866,742	6,776,694	+ 90,048
Earnings per train mile	12s. 4¼d.	12s. 2d.	+ 2¼d.
Expenditure per train mile	8s. 7d.	8s. 4¼d.	+ 2¾d.
Operating ratio	69·38	68·67	+ 0·71
Number of passengers ...	43,483,242	41,876,773	+ 1,606,469
Tonnage of:			
Goods	1,131,960	1,279,805	− 147,845
Coal, &c.	1,858,139	1,679,798	+ 178,341
Other minerals ...	292,360	345,488	− 53,128
Live stock	179,505	158,572	+ 20,933

VICTORIA

State Railways Debate

Improvements in railway services and a reduction in charges were urged in the Legislative Assembly when the second reading of the Bill to write off State Railways capital to the amount of £30,000,000 was passed. It was stated that the money on which the railway system had been founded had been borrowed largely from foreign investors. The writing off would mean a yearly saving of £1,303,000, but the Bill provided for the cessation of payments on non-paying lines, and concessions on certain freights and fares. In addition, a sum of £121,000 had to be paid into the sinking fund. Last year the railways had a deficit of £478,000, which had been made good through State taxes, thus leaving a total balance of £127,000, which is the actual amount by which the Railway Commissioners will benefit. In the opinions of the Auditor-General and the Transport Board, a reduction in rates and fares will not necessarily follow the passing of the Bill.

FRANCE

Traffic Receipts for 1936

Traffic receipts for the year 1936 of the six railway systems are as follow (in thousands of francs):—

	1936	1935	Inc. or Dec Per cent.
Alsace-Lorraine	636,720	654,106	− 2·70
Est	1,395,796	1,338,302	+ 4·30
Etat ...	1,606,222	1,569,186	+ 2·36
Nord ...	1,536,000	1,539,069	− 0·20
P.O.-Midi ...	2,000,555	1,994,978	+ 0·28
P.L.M. ...	2,770,840	2,743,309	+ 1·00
Total ...	9,946,133	9,838,950	+ 1·09

So last year only two lines showed a decrease, one of them very small, while the end of the year witnessed a sharp improvement. During the Christmas and New-Year holidays, the traffics on all railways, taken collectively, improved by 20·7 per cent. and since then the increase has been a steady 15 per cent. A statement issued by the Ministry of Public Works confirms that the receipts of the six great railway systems in 1936 amounted to fr. 9,946,133,000, comparing with fr. 9,838,950,000 in 1935. The increase for the year is therefore fr. 107,183,000, or 1·09 per cent. This is the first time since 1929 that any year has shown an improvement in comparison with the preceding year, and though the increase of 1·09 per cent. may appear small, it is very encouraging as the loss in the first seven months of the year was more than regained. The improvement was slight in August and September, but

in December it was as much as 12·50 per cent.

Metro Extensions

Another extension of the Paris Metro lines has been opened to the public. The line, No. 14, which had been extended to the Gare Montparnasse, has now been prolonged from the Place Bienvenue, named after the late engineer who was known as the "Father of the Metro," to the Porte de Vanves, one of the city gates. M. Raymond Laurent, President of the Municipal Council and others spoke briefly at the opening ceremony. Madame Bienvenue was among the guests invited by M. Paul Martin, Director General of the Paris Metropolitan Company.

The electrification of the line from the Luxembourg to Sceaux is now nearing completion and will probably be opened as a Metro suburban line in May or June. The Metro has other suburban extensions under consideration. These may be financed in part by grants under the scheme of public works for relief of the unemployed.

The Metro is also busy with enlargements of stations to facilitate access to the Paris Exhibition this year. The exhibition grounds will be served by four adjoining Metro lines. Work is proceeding at the Trocadero near the main entrance to the exhibition, the Champs-Elysées, the Concorde, and other stations. New light steel rolling stock will be used to give more rapid acceleration.

DENMARK

Copenhagen Central Stations

December, 1936, marked the 25th anniversary of the present Central station at Copenhagen. The enormous growth of traffic during this period is shown by the number of trains using the station in the years 1911-12, 1922-23 and 1936-37, the figures being 29,000, 72,000 and 226,000 respectively. There are still only 12 platform tracks, but by running a number of trains through the station to carriage sidings at either end, shunting movements have been much reduced, so that congestion is noticeable only at Christmas and Easter. The station handles only passenger traffic; the main goods station, the tracks of which adjoin those of the passenger station, but have separate outlets to the main lines several miles out, was opened in 1901.

Bridge Construction and Other Improvements

A new bridge is being built across the Limfjord between Aalborg and Nørresundby to replace the existing swing bridge, which is subject to both a weight restriction and a 10 m.p.h. speed restriction. Part of the steelwork for the new bridge, including the bascule-span, has been taken from the bridge at Frederikssund on the abandoned Frederikssund-Hvalso-Ringsted line; the spans were lifted bodily on to pontoons and transported by sea direct to the site of the new bridge. Work is at present progressing on the piers. In connection with the new bridge the track between Aalborg and the southern end of the bridge will be doubled, as the short section between Aalborg and Nørresundby (1·6 miles) is used by the trains of the private railways branching east and west off the main line at Nørresundby, as well as by the State Railway trains. The new bridge will be for single track like the old one.

The doubling of the main line between Aarhus and Randers is proceeding apace. The sections from Aarhus to Brabrand and from Lerbjerg to Laurbjerg have already been opened, as well as one of the tracks on the new deviation between Stevnstrup and Randers. This deviation enables trains to proceed through Randers without reversal. Opportunity is being taken to remodel and enlarge Randers station; these works have not yet been completed.

Special Lyntog Ferry Steamer

A new ferry steamer has recently been put into service by the State Railways. This vessel, which has been named *Freja*, will normally be used as an automobile ferry on the Great Belt crossing, but it has been designed so that it can also take one "Lyntog" or four ordinary passenger coaches, or it can be used on the Kalundborg-Aarhus crossing when one of the large automobile ferries normally in service there is being overhauled. Because of the triple function of the new vessel it has had to be made so narrow that it does not fit the ferry berths at Korsor and Nyborg; it has therefore been necessary to fit it with two supporting arms which are normally flush with the sides of the vessel, but which can be made to project until they secure the vessels firmly in the centre of the berth, thus ensuring correct alignment of the railway track. This innovation works well in practice.

The enlarging and remodelling of Roskilde station (20 miles west of Copenhagen) is now nearly completed. The present service-slack to 20 m.p.h. through the whole station will be replaced by 60 m.p.h. for the through Copenhagen-Korsor tracks and 35 m.p.h. for the remaining roads.

IRISH FREE STATE

G.S.R. Station Gardens

To add further to the amenities of railway travel, the G.S.R. directors have decided to beautify the stations with plants and flowers, in a properly directed scheme. The services of an expert horticulturist have been secured, and he will visit all stations and advise the stationmasters requiring his assistance. Even at stations where conditions do not offer much scope for floral decoration, it is hoped to improve and brighten their general appearance. A prize scheme is being inaugurated for the best kept stations in each of seven areas, prizes and diplomas being awarded, by directors, in each area, for stations displaying exceptional merit. The first, second, third, and two consolation prizes will be £10, £5, £3, and £1 each respectively, and general conditions of premises, platforms, cleanliness of permanent way, waiting rooms, lavatories, windows, lamps &c., will be taken into account, together with improvement due to plants and shrubs.

CHINA

Locomotive for Peiyang Engineering College

An old locomotive which cost $100,000 when supplied by the Lima Locomotive Works for use on the heavy grades of the Peiping-Suiyuan Railway, has recently been sent from the Nankow Pass to Tientsin, where it will be placed in the college grounds, and later transferred to a hall of the college to be used for demonstration purposes for engineering students.

Miscellaneous News

The Ministry of Railways is considering a four- or five-year construction programme applying to the whole of China, in which it is expected that the expansion of the railway system will take place at the average rate of 1,000 miles of new line opened for traffic each year.

During the 11 months January-November, 1936, the revenues of the Peiping - Mukden Railway totalled $29,000,000, an increase of $4,000,000 over those for the like period in 1935.

Damages Due to Political Disturbances round Sian

Many bridges and much of the Lung-Hai Railway permanent way were damaged during the disturbances resulting from the recent *coup* in Sian. The Wei River and Lingkow bridges, in particular, suffered considerable damage. Repairs are being effected as quickly as possible, but with further political troubles looming ahead it may be some time before normal conditions are restored. In addition many passenger coaches were wrecked in Sian station yard, and it is estimated that losses due to all damages and to curtailed revenues have already amounted to some $5,000,000.

Kiaochow (or Tsingtao)-Tsinan Railway

This line, which is wholly in Shantung Province in north-eastern China, connects Tsingtao (or Kiaochow, as it was called in the days when it was German) with the Peiping (Peking)-Shanghai main route at Tsinan, on the Tientsin-Pukow Railway and the capital of Shantung. In the summer months when Shanghai is very hot, many Europeans migrate northwards to Tsingtao, and through services are run.

(See illustration on page 290.)

RECENT DEVELOPMENTS IN AMERICAN RAIL MANUFACTURE

Controlled cooling of rails is now a standardised feature of American mill practice, frequently in conjunction with hardening of the ends to reduce battering

DURING recent years the prevalence and dangerous possibilities of transverse fissures in rails in the United States has focused attention upon the steel rail to a degree never previously known, and has resulted in some important changes in the process of rail manufacture. Last year the findings were published of a committee representing the American railroads and rail manufacturers, which conducted its researches at the University of Illinois, and had as the object of its enquiry the cause of fissuring. As part of the experiments rails were subjected, under laboratory control, to conditions as closely as possible representing those of actual service. A rolling load machine was specially constructed for the purpose of conducting batter tests on rail-ends; tests were carried out in railway tracks over which heavy traffic is worked, with the object of ascertaining the maximum stresses to which rails are subjected—by reason of badly adjusted locomotive axleloads and the excessive hammer-blow of inadequate balancing in particular—as factors bearing on the development of fissures. As to the initial cause of fissuring, the investigators, after exhaustive research, came to the same conclusion as that reached as far back as 1927 by Messrs. Sandberg in England, and later by Messrs. Gerhardt of the Bethlehem Steel Company and Mackie, of the Dominion Steel & Coal Corporation of Nova Scotia, that fissures are a development of shatter cracks, and that shatter-cracking—an outcome of stresses set up in the rail-head at a certain stage of the cooling out after rolling—can be prevented by a controlled method of cooling.

Among the tests made by this committee was an attempt, by means of microphones and amplifiers, actually to hear the cracking in the interior of the head in some rails cooled out more rapidly than usual, and thereby to verify, if possible, the precise temperature at which shatter-cracking takes place, but so many other confusing rail mill noises were heard that the sound specially sought could not be isolated. Further tests proved that it is the bending of rails under load that has the most pronounced influence in extending the shatter-crack from its original nucleus to a fissure large enough to cause failure of the rail. This fact directed attention to the best type of acceptance test for rails, to give some indication as to whether or not shatter cracks are present, and the committee was of opinion that a bend test, with the rail head downwards and the load applied to the foot at two points 6 in. apart, offered the best possibilities. But for routine testing it would require a machine of 500,000 lb. (225 tons) capacity suitably arranged for quick testing. As a detector of shatter-cracked rails the ordinary falling weight test, conducted on a head-up rail, was found to be valueless, as many affected rails were found to pass this test without failing. Testing head down was better, with the head in tension instead of compression, but some rails with shatter-cracked heads even withstood one blow of the falling weight in this position without fracturing. The repeated drop test, with a series of blows delivered from a small height, is still better, as the impacts are likely to develop the cracks to fissure size and to cause failure, but even this did not prove to be 100 per cent. effective. The worst evil is that in the matter of shatter-cracking every rail is a unit, and it is only by the chance of selection that affected rails may be found. Obviously the ideal test would be a non-destructive test applied to every rail, and at present the only possible way of doing this would appear to be on the lines of Sperry detection, but of a very much more sensitive description, using extremely high frequency or "supersonic" waves, capable of detecting cracks extending to no more than one-tenth of one per cent. of the cross-sectional area of the rail. Even if such a method be perfected, the matter of cost, and of application without interruption of mill output, will have to be regarded as important considerations.

Controlled Cooling

Prevention is better than cure, however, and as a result of the researches of the various investigators mentioned, the American railways are now fully alive to the necessity of controlled cooling. Certain mills are applying this treatment to the whole of their output, as also are several British rail-mills; and the majority of the American railways now specify controlled cooling for all the rails that they purchase. Various methods of applying the retarded cooling are in use in the United States, but the one which finds the most favour, as offering the least hindrance to the high outputs of American mills, is that of cooling boxes. The rails are cooled out on the hot bank in the usual way until the temperature has fallen to about 540 deg. C., but in any event not less than 500 deg. C. They are then placed in the boxes, with sufficient rails in each box to ensure a gradual and even fall in temperature throughout each rail; during the cooling the boxes are covered and protected from exposure to snow and rain, the joints being kept sufficiently tight to avoid cool currents of air coming into contact with the rails, which remain in the boxes until the temperature has fallen to 205 deg. C. or less. Each box, as loaded, is removed from the hot bank to a suitable place, so that the rails do not obstruct the hot bank during their cooling out. It is now the general opinion in America that rails which have been subjected to controlled cooling are not merely free from shatter cracks, but are also less subject to failure from the development of other weaknesses, owing to their improved ductility; and this result is secured without reducing their hardness, as determined by laboratory tests, or their capacity for wear in the track. There is not, as yet, exact agreement between the authorities as to the exact range of temperature during which shatter-cracking may be expected to take place, apart from controlled cooling; Messrs. Sandberg have generally held that the tendency is greater between 500 and 340 deg. C., and Messrs. Gerhardt and Mackie have considered the danger range to lie below the latter temperature level. But all are agreed that in practice it is wise to start at a temperature sufficiently elevated to allow a substantial margin of safety.

The Kenney Treatment

With a view to the improvement of rail wear, various heat treatments for rails have been tried in America, but necessarily with caution, owing to the high range of carbon normally worked to, which without adequate precautions might accentuate shatter-cracking, as a result of quenching, were adequate precautions not taken. The Bethlehem Steel Company has lately perfected the Kenney process, in which the rail is quenched in water as it comes from the mill, down to a certain predetermined temperature, after which equalisation is effected at a raised temperature, and the operation concludes with controlled cooling. A series

of tests on rails treated by the Kenney process is set out in the June 13, 1936, issue of our American contemporary, the *Railway Age*, from which the foregoing particulars have been taken, and shows that with carbon averaging ·74 per cent. and manganese ·72 per cent., an untreated tensile strength of steel in the railhead averaging 65·2 tons per sq. in. was increased to an average of 79·4 tons per sq. in., while, more important, an average elastic limit of 37·2 tons per sq. in. increased to 56·6 tons per sq. in. The average percentage of elongation fell slightly from 8·7 to 8·5 per cent., but the average reduction of area rose from 12·0 to 13·6 per cent. as the result of treatment. The average Brinell hardness figure for the rail-heads rose from 298 to 363, and as a satisfactory indication of increased toughness, the Izod notched bar impact test figure rose from 2 to 7 ft.-lb. It is not without significance that the best elongation and reduction figures in the treated rails were in both cases the rails containing the highest percentages of manganese—·82 and ·84 per cent. respectively. Such low elongation and high tensile test figures are, of course, common in America, as the necessary outcome of carbon contents which would not be countenanced in this country.

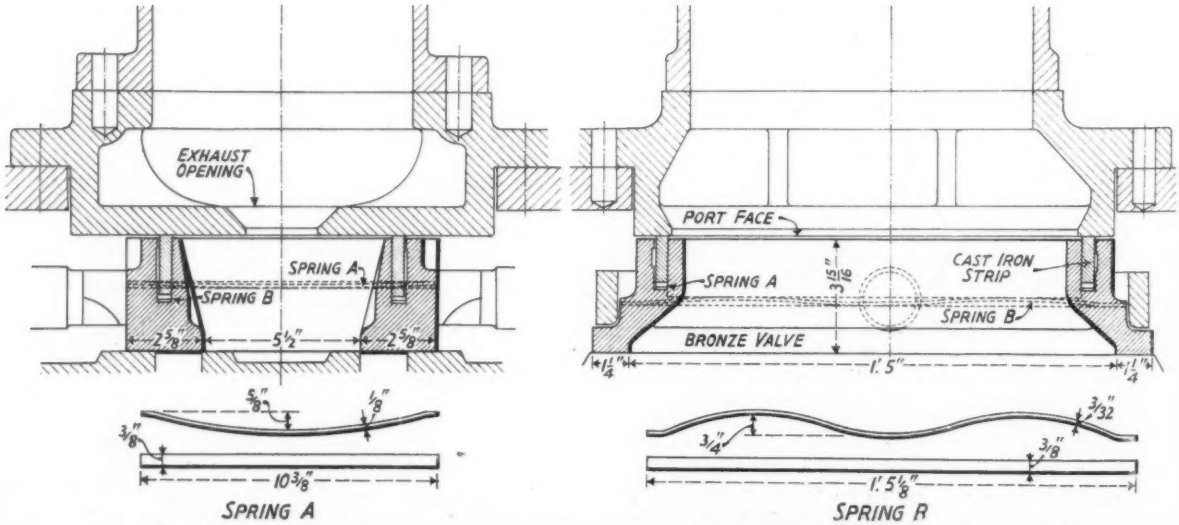
Heat-Treatment of Rail-Ends

Considerable attention has also been paid in the United States to treatment of rail-ends, with a view to giving them increased resistance to the battering at the joints which frequently makes it necessary to remove rails from service before general wear justifies it. Systematic recovery of such rails has been practised, by cutting off the battered ends, re-drilling, and using the shortened rails again, and also the building up of worn ends by welding *in situ* (similarly to the building up of noses and wing rails of crossings) has a considerable vogue, but it is realised that any degree in which the first life of the rails can be prolonged by suitable end treatment is an advantage. The most effective way of carrying out such a treatment is at the rail mill, where it can be applied with a more accurate control of temperature than is possible if the rails are treated in the track, and, of course, more cheaply and expeditiously.

At the Bethlehem Company's works an end treatment of this description is given as the rails lie on the cooling-banks immediately after being sawn to length. From a portable quenching head, incorporating a large number of jets, water is applied to the rail-head at the ends in such a way that the remainder of the rail is protected from accidental contact with the water. The period of application of the spray is controlled by an electric timing apparatus. It is calculated that the back-flow of heat from the remainder of the rail, which is still red-hot, and so constitutes a large reservoir of heat, will prevent any part of the rail from being subjected to excessive strains in cooling, and the ordinary controlled cooling treatment also normally follows the quenching treatment. It is claimed that the degree of hardness and the depth of penetration of the head metal can be readily controlled. With analyses so high in carbon as those habitually worked to in North America, however, the risk of fissure development as a result of this quenching is still considerable, notwithstanding the precaution taken to avoid it, and some breakages of treated rails at the joints have occurred.

Mitred Rail-Joints

With a view to improving the riding at rail-joints, in the interests of reduced wear-and-tear of both rolling stock and passengers, the old device of mitreing the rail-joints—that is, cutting the rail-ends at an angle of 45 degrees instead of at right-angles—is being tried. In earlier years this practice had serious objections, for when joint-gaps closed up as a result of creep, a wedging action took place which tended to break fishbolts and fishplates and have dangerous results. To overcome the difficulty a combination of mitre-sawn head and square-sawn base was tried, but the delay to mill output so caused and the special machining required made the cost prohibitive. Now, however, means have been perfected of making the combination of mitre and square cuts while the rails are still at red heat, and the cost objection has thereby been largely reduced. It is claimed that in the three years during which the present-day mitred joints have been under trial, in locations carrying extremely heavy traffic, joint batter has been reduced from 50 to 75 per cent., and, further, that the gradual passage of the wheel load from one rail to another, as compared with passing over a gap between square-cut ends, so reduces shock as to make a greater degree of end-hardening safely practicable.



Details of hollow-back balanced slide valve as used on Aspinall's 4-4-2 express locomotives of the "1400" class, Lancashire & Yorkshire Railway. *(See editorial note on page 267)*

RAILWAYS AND ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Highland Tourist Traffic

THE announcement that the Minister of Transport is to make a grant of £4,250,000 from the Road Fund for highway improvements in the Highlands is hardly surprising, as in recent years the growth of the tourist traffic to the far north has made it plain that the roads and bridges are often inadequate for modern needs. This increased popularity of the Highlands is in no small way due to the enterprise of such railway-associated road operators as David McBrayne Limited which operates nine routes on the west coast, and the Scottish Motor Traction Co. Ltd., which has popularised various extended tours of the Highlands by introducing small Leyland and Bedford luxury coaches with generous seating arrangements. Indeed, so successful have these tours proved, that taking 100 as the index figure for 1932, the traffics have increased in subsequent years as follow, 1933, 163; 1934, 183; 1935, 176; and 1936, 188. The popularity of these tours, which, of course, provide access to parts only otherwise reached conveniently by private car, is also reflected in the fact that small towns like Thurso now reckon to receive an influx of about 120 motor coach tourists every night throughout the summer season.

Season Tickets

THE annual report of the Traffic Commissioner for the East Midland Area for 1935-36 makes an interesting reference to the arrangements that have been made for issuing season tickets in the Lincolnshire area. It was considered necessary during the year to remove anomalies in the rates charged by various operators, and a meeting at which the railways were represented was held to draw up standard rates in relation to the ordinary adult single fares for one month, two months, and three months. At the meeting, agreement was first reached as regards the rate to be charged by operators on the one-monthly basis which was fixed at the existing rate to which the railway companies said they had no objection. The railway companies, however, stated that they considered the existing two- and three-monthly season rates of 12s. 5d. and 17s. 3d. respectively were unduly low in relation to the monthly rate of 7s. 9d. As a result of the meeting, it was agreed as follows:—

1.—All parties, including the railway companies, agreed that the existing one-monthly charges should be accepted as the basic rates.

2.—The road operators agreed that the existing two-monthly rates should be varied so that they should be double the monthly rates less 20 per cent.

3.—The road operators agreed that the existing three-monthly rates should be varied so that they should be treble the monthly rates less 25 per cent.

Subsequent to the meeting, representations by the railway companies that the basis for the two- and three-monthly season rates were low were heard by the commissioners at a public sitting, but the proposals of the meeting were approved without amendment. The following are examples from the agreed scales:—

Adult Single Fare	One Month	Two Months	Three Months
	£ s. d.	£ s. d.	£ s. d.
1d.	0 7 9	0 12 6	0 17 6
6d.	0 16 9	1 6 9	1 17 9
1s.	1 7 6	2 4 0	3 1 9
2s. 6d.	2 4 3	3 10 9	4 19 6

Percentage reductions are made for school children and apprentices, and no operator is allowed to issue season tickets unless he has specific authority to do so. Such a co-ordinated scheme on so large a scale as thus exists in Lincolnshire is unusual, especially in an area that is primarily agricultural.

National Highways

BEFORE the opening of the nineteenth century national road developments were generally carried out to meet the requirements of military authorities for purposes of aggression, defence, or maybe merely administration. While this resulted in the great Continental powers, with whom military considerations have always been of supreme importance, being provided with an excellent basis for a modern system, it left this country—last invaded by the ill-fated Spanish Armada—to face the age of sudden and rapid commercial development with little more than the old Roman trunk roads and the remnants of the one-time privately-owned toll roads. The problem became more acute, of course, with the introduction of the internal-combustion engine, and in the politically troubled pre-war years the need for reform was acknowledged, in principle at any rate, by Mr. Lloyd George's Road Fund. Within recent years large grants for road improvement have been made by the Ministry of Transport to local authorities, but it has not been until the present session of Parliament, however, that any real administrative reform has been attempted. Even so, the new Trunk Roads Act cannot claim to be more than a first step towards a system of uniform arterial highways such as are the pride of some of the larger Continental countries.

London Bus Fleet Improvements

AT the beginning of this year the London Passenger Transport Board announced as part of its programme for 1937 the replacement with modern-type vehicles of the remaining NS buses. This type was introduced in 1923 and, as the table published on page 191 of our July 31, 1936, issue showed, 1,032 were in service on June 30 last. The withdrawal of NS type buses from Service 46 (Alperton—Victoria station) was begun in the middle of January, and they have now been replaced on that service by buses of STL type, the most modern vehicles of the London Transport bus fleet. The board has decided that 100 new Leyland buses of the latest type will be allocated to the Hendon garage, thus providing a new fleet of vehicles for the following routes: 13 (London Bridge—Golders Green); 28 (Wandsworth Bridge—Golders Green);

52 (Mill Hill—Victoria); 83 (Golders Green—Kew Gardens); 113 (Hendon Central—Canons Park); 121 (Hendon garage—East Dulwich); and 183 (Golders Green—Northwood station). These routes are now served by NS, STL, and ST type buses. It is expected that the withdrawal of the NS buses and the substitution of Leyland buses, which are now being built, will begin in April. The Hendon garage will be extended and altered.

Coach Body Designs

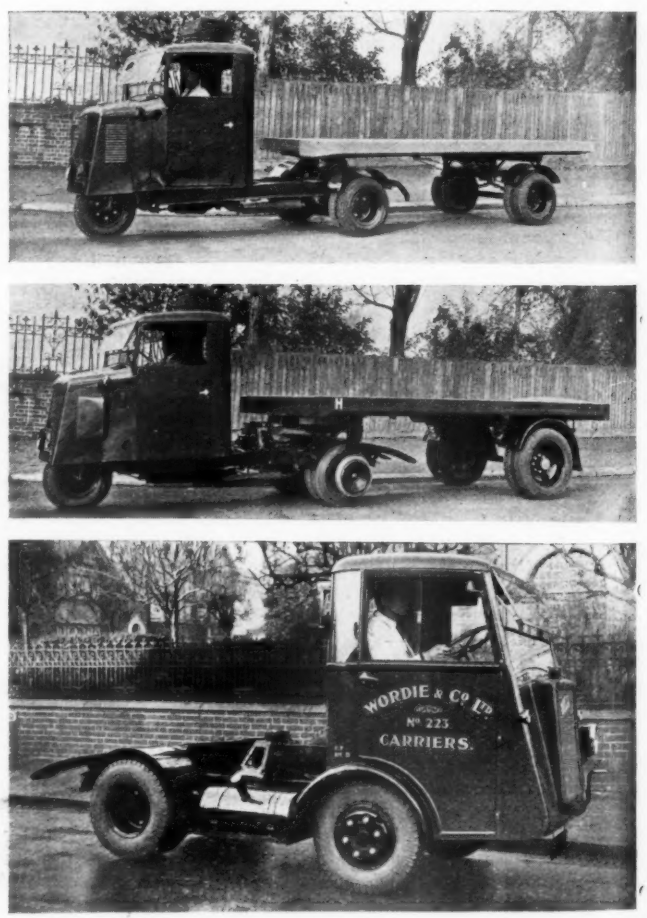
IN these days when we like to think that the justification of design is the function it may serve, we have achieved a refreshing simplicity which, unlike the products of Victorian and even later days, needs no apologists. It seems curious, therefore, that one of the most marked exceptions to the present tendency should be apparent in such a young and progressive industry as road transport. It is true, of course, that the modern bus, such as runs in the London streets, is a splendid example of efficient utilitarian design, but when we contemplate some of the vehicles used on express services there seems to be a reversion to discarded principles. True it may be that modern materials are used, and that great ingenuity is expressed, but when all is said and done it often seems that the coach designer has taxed his imagination only to suggest a non-existent streamlining by the addition of such devices as fins painted in garish colours. But, perhaps after all the coach designer knows his job better than we think, and all these devices really have a function. Are they like a peacock's feathers to the public?

Bus Engine Positions

IN last month's Road Transport Section we illustrated the rear-engined coach, designed by Mr. L. G. Wyndham-Shire, Chief Engineer of the Birmingham & Midland Motor Omnibus Co. Ltd., now in regular service between London and Birmingham. We then remarked that, although rear-engined vehicles are a comparative novelty in Great Britain, they are used extensively in the United States and in certain Continental countries. In fact, American bus manufacturers have now abandoned the "conventional" bonneted engine, and house the engine either centrally underneath the floor, or, with the gearbox, at the rear. A good example of the latest U.S.A. practise with engines under the middle of the floor is provided by the new fleet of vehicles recently placed in service by the Baltimore & Ohio Railroad for its well-known train-connection services between Jersey City and the heart of New York. One of these coaches is illustrated on page 288, and the view shows clearly the effect in external appearance of removing the engine from the front. With these vehicles the twelve-cylinder engine, which develops 145 h.p., is of the horizontally-opposed pancake type evolved by the White Motor Company of Cleveland, Ohio, and believed to be the only one of its kind in the world. Such bus engine positions allow of a full-fronted vehicle with front entrance and a flat floor extending the whole length of the bus—features of considerable value when the driver also acts as conductor. Legal limitations in Great Britain of course prevent large one-man vehicles attaining in this country the popularity they have secured in the United States, but this by no means connotes that "unconventional" engine positions will not be given a great deal of consideration in the near future.

The Mechanical Horse

MANY regard the mechanical horse as a mere substitute for its animal predecessor, but what is often overlooked is that once the process of conversion has been established there are far greater possibilities for providing a more economical and adaptable service. This is demonstrated by the selection of Karrier vehicles which we illustrate below. There is, for instance, in the top illustration, the Cob Junior and Cob Senior tractor-trailer combination. The tractor, which is designed to deal with four-ton pay loads, is fitted with the "J" type automatic coupling gear favoured by railway companies. The engine is a four-cylinder unit developing 47 b.h.p., and the trailer is 12 ft. 6 in. long. The middle illustration is of the Senior model, a six-tonner with 14-ft. trailer; the engine is a six-cylinder of 70 b.h.p. This tractor is equipped with the original "BK" type Karrier coupling gear which functions with trailers of four-point support when uncoupled from the motive unit. The third vehicle is the new Bantam four-wheel tractor, fitted with "BK" type automatic coupling gear, which has been supplied to Wordie & Co. Ltd., of Glasgow, a railway-associated company. This unit is the four-wheel equivalent of the Cob tractor, and can be employed with any "BK" type trailer. The wheelbase is 6 ft., and the same power unit is employed as on the Cob Junior tractor. The pay load is five tons. Horse-drawn vehicles cannot, of course, offer the power range of these mechanical units.



Three examples of Karrier short-wheelbase tractor units

Overseas Notes

Proposed Minister of Transport for South Africa

The Minister of Railways and Harbours recently informed the Automobile Association of South Africa that the appointment of a commission was being considered to investigate the proposed formation of a Ministry of Transport in South Africa. It was suggested that the commission might consist of three persons: an independent chairman to be appointed by the Minister; one member to be nominated by the Provincial Advisory Committee; and one to be nominated by the National Roads Board. The Automobile Association replied that it was opposed to the appointment of such a commission, which would be by no means representative of the many transportation interests in this country, and put forward the alternative suggestion that the Minister might convene a special conference, consisting of 18 delegates and a chairman, to discuss the proposal for a central controlling and co-ordinating authority in transportation. The association fears that the report of a commission as suggested by the Minister might be used as a *de facto* reason for introducing legislation opposed to the considered views of transportation interests in South Africa generally. It considers that two delegates ought to be drawn from all the main interests involved, *e.g.*, Government, provincial, commercial, industrial, labour, local authorities, motoring, agriculture and civil aviation; to meet under an independent chairman, not associated with the Railway Administration, appointed by the Minister. It is felt by the A.A. that such a conference would provide an opportunity of collating the most authoritative and expert opinion in the country on the complex subject of transport control.

New Licensing Regulations in Holland

New regulations affecting the licensing of public service vehicles in Holland come into force next Monday, February 15. Licences will be required by all motor-bus services, sightseeing tours, taxicabs, and other motor-cars running for hire, and third-party insurance will be compulsory. Requests for the licensing of bus services operating in more than one district will be dealt with by a commission, having the power to impose conditions regarding route, frequency, and hours of service, rates, and types of vehicle. Licences will be granted for ten-year periods, and will be renewable similarly. At any time within the ten years the licence may be revoked if the holder infringes the conditions, or cancelled by the holder himself, if he so desires. The licensing authority, moreover, may withdraw a licence after five years if it is in the public interest to do so. Every sightseeing vehicle must be individually licensed, and for a specific route. These licences will be granted by the State Traffic Inspector. The municipal authorities concerned will licence taxicabs and cars running for hire.

Eastern Bengal C & D. Service

On January 15 the Eastern Bengal Railway administration extended its collection-and-delivery service in Calcutta. At Chitpore, the principal goods terminal of the railway, delivery services both by road and by river have been in successful operation for several years past. The service by river was introduced to meet the requirements of jute mills and other industrial undertakings on the banks of the River Hughli, north of Calcutta. In Calcutta proper, there is also a similar service for the delivery of parcels and luggage booked to Sealdah, the principal passenger terminus, and for the collection of luggage from the residences of intending passengers. The new service undertakes, through authorised railway carrying agents, the collection and delivery of goods consignments, in addition to luggage and parcels, booked to and from Calcutta. For small charges, varying from 1 anna to 2½ annas (1d. to 2½d.) according to distance, merchants and traders in Calcutta are relieved of the cost of transportation to and from the station. The service applies to consignments booked to and from stations on the Eastern Bengal Railway and the connected railway and steamer services. Dangerous and explosive articles, goods in bulk and live stock are not, however, accepted for carriage over this service, except under special arrangements with the carrying agents. The facility of street collection and delivery in respect of goods now obtains on the East Indian and the Eastern Bengal Railways, and it is expected that the Bengal-Nagpur Railway will soon introduce a similar service.

Additional Transport Taxes in Germany

A transport tax on goods motor lorry services has been in force in Germany since October 1, 1936, and this is to be extended to passenger services on March 1 next, according to a decree issued recently by Herr von Eltz-Rubenach, then Minister of Transport. Within the past few days, of course, he has been succeeded in the Ministry by Herr Julius Dorpmüller, as we recorded on page 245 of last week's issue. The new tax will apply to all regular passenger motor services, including those worked by the State Railway and the Postal Department, as well as those privately owned or operated. Local taxation authorities are made responsible for seeing that the correct sums are paid. The new rates of taxation are:—

Long distance services: 12 per cent. of the actual fare, if below the legal maximum, or 10·7 per cent. of the statutory fare.

Local services and taxicabs: 2 per cent. of the actual, or 1·96 per cent. of the statutory fare.

Motorcars hired for passenger transport: 2 per cent. of the actual fare.

Excursion trips, or buses and lorries hired to convey passengers: 0·3 pfennigs per passenger-kilometre, equivalent to a 12 per cent. tax, assuming an average fare of 2·5 pfennigs per passenger-kilometre.

Services running into Germany from foreign countries, and occasional services, are to be taxed for the portion of their journey on German soil at the same rate as excursion trips. Reichsbahn services are to be taxed on the same scale, but it appears that postal vehicles will be treated for taxation purposes as local services.

An American Railway's Road Shareholdings

Typical of the road shareholdings of U.S.A. railways are those of the Southern Pacific Company. It owns 87·37 per cent of the capital stock of the St. Louis Southwestern Railway Company, and these two companies have an interest in Southwestern Greyhound Lines, Inc., which operates motor coaches in the territory between Albuquerque, New Mexico, and El Paso, Texas, on the west; and St. Louis, Missouri, and Memphis, Tennessee, on the east. The Southern Pacific also owns 39·05 per cent. of the common and 22·78 per cent. of the preferred stock of Pacific Greyhound Corporation, Inc., which, with its subsidiaries, operates the principal motor bus lines on the Pacific Coast south of Portland, Oregon, and in the territory west of Salt Lake City; Albuquerque, and El Paso. Co-ordination in road-rail freight service is provided by the Pacific Motor Trucking Company, operating, principally in California, and by two motor transport companies operating respectively, in Texas and Louisiana.

Organisation of a Railway Company's Road Motor Engineer's Department—III

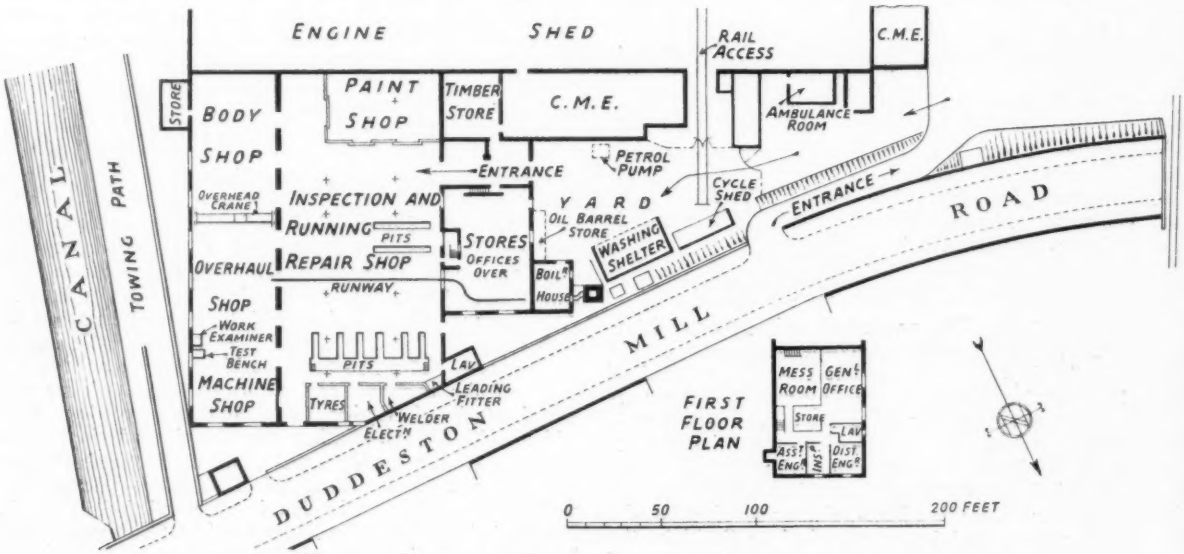
Details of the L.M.S.R. workshop at Saltley, Birmingham

In many respects the Saltley depot is similar to the one at Kentish Town, since each has been planned to cope with the standardised system of vehicle maintenance organised by the department. But since it is more recent than its southern equivalent, it is only natural that the lesson learned in the operation of the earlier shop should have given rise to certain modifications and improvements in laying out the new one. The new district workshop for the Birmingham district, of which a site plan is reproduced below, comprises the large building formerly used by the former Midland Railway Company as a locomotive repair shop where partial overhauls were carried out, and was converted to its present use in 1935. Excellent natural lighting is provided, the roof containing a large proportion of glass, so that there are no dark corners. Considerable attention has been paid to artificial lighting, the principle aimed at being a good general illumination together with concentrated light at individual points where specially required; for instance, the lights over the benches are all of the universal swivel arm pattern, allowing a considerable movement, and for work remote from benches swivel arm stand lamps, which can be connected to conveniently situated plugs, are much in evidence.

The low-pressure hot water heating system sets a new note in many ways. Unit heaters located on the wall about 10 ft. from ground level are used. These consist of gilled tube radiators through which the hot water is circulated. A fan, driven by a small motor, behind each unit projects cold air across the hot tubes, so that it is heated and subsequently deflected towards the floor by adjustable slats. This system has proved very efficient. There are four boilers, of which two large ones provide hot water for the unit heaters. Either boiler will take two-thirds of the full load, and, in all except the coldest weather, one is sufficient for ordinary requirements. Two smaller boilers provide heat for the offices and messroom, and hot water for basins and other domestic purposes respectively. A photograph of the boiler room is reproduced on page 282.

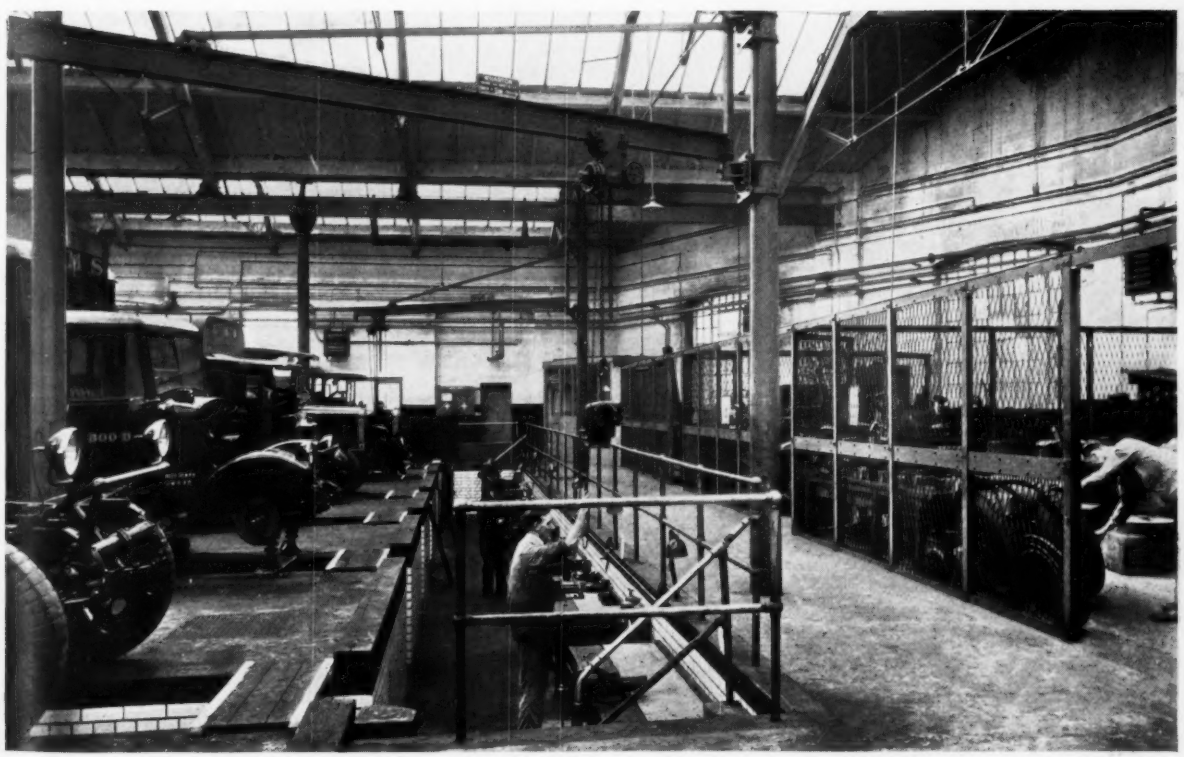
From the site plan it will be seen that road access is obtained from Duddeston Mill Road. As the road falls away towards the railway bridge, the entrance is set at an angle and on an appreciable slope, and vehicles turn round on the ground outside the locomotive shed before entering the yard. Rail access is available to the yard itself, and an electric petrol pump is installed. Details of the layout of the offices can readily be seen on reference to the plan. In the assistant's office a small tower is built out, affording an almost uninterrupted view of the running shop below. This is a valuable asset from the supervisory point of view. Good telephonic communication is provided, there being one party and two direct lines from New Street exchange, and an internal system in addition, which enables close touch to be maintained between the various sections.

The stores are located underneath the offices on the ground level, and measure roughly 65 ft. long by 45 ft. wide and 15 ft. high. Very careful attention was paid to the layout of the stores, separate doorways being provided for receiving and issuing material. At the former end, in addition to receiving, material for sub-depots is prepared, and the door is of such a size that a motor store van can be backed right in, enabling loading to be effected under cover. The arrangements of bins is similar to that employed at Kentish Town, the whole being made up of angle iron; tyres, mudguards and other heavy and bulky articles are stored in an auxiliary building nearby. One end of the stores is kept for heavy articles, and is spanned by a runway which passes straight across to the running repair shop and terminates just inside the overhaul shop, where a heavy article brought to that point can be lifted by the overhead travelling crane.

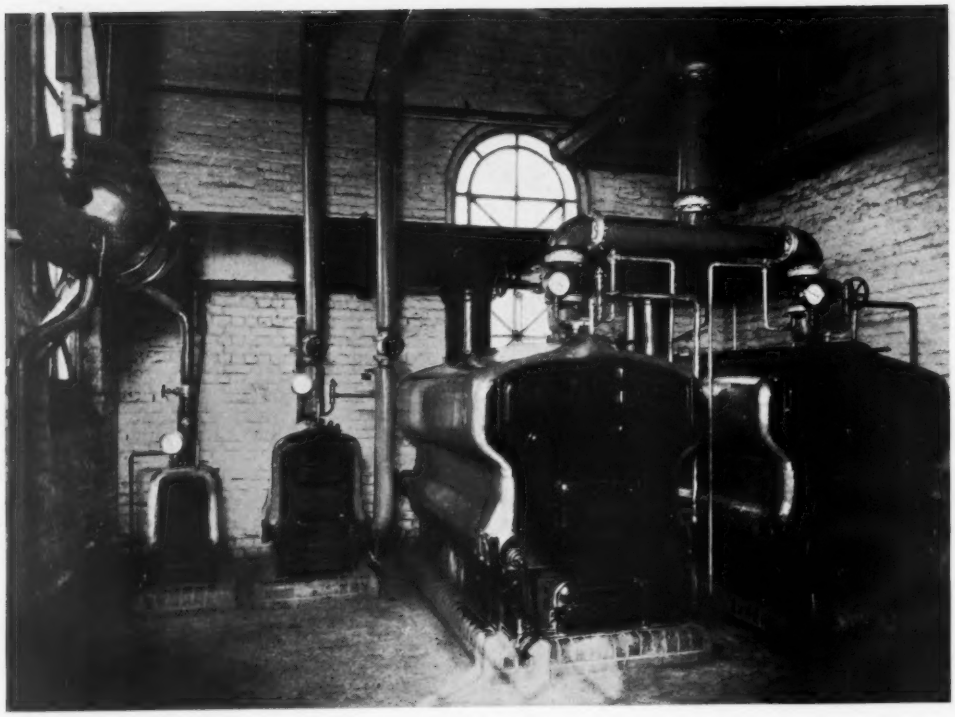


Plan showing layout of the various shops and departments of the Saltley workshop

View of inspection and repair shop

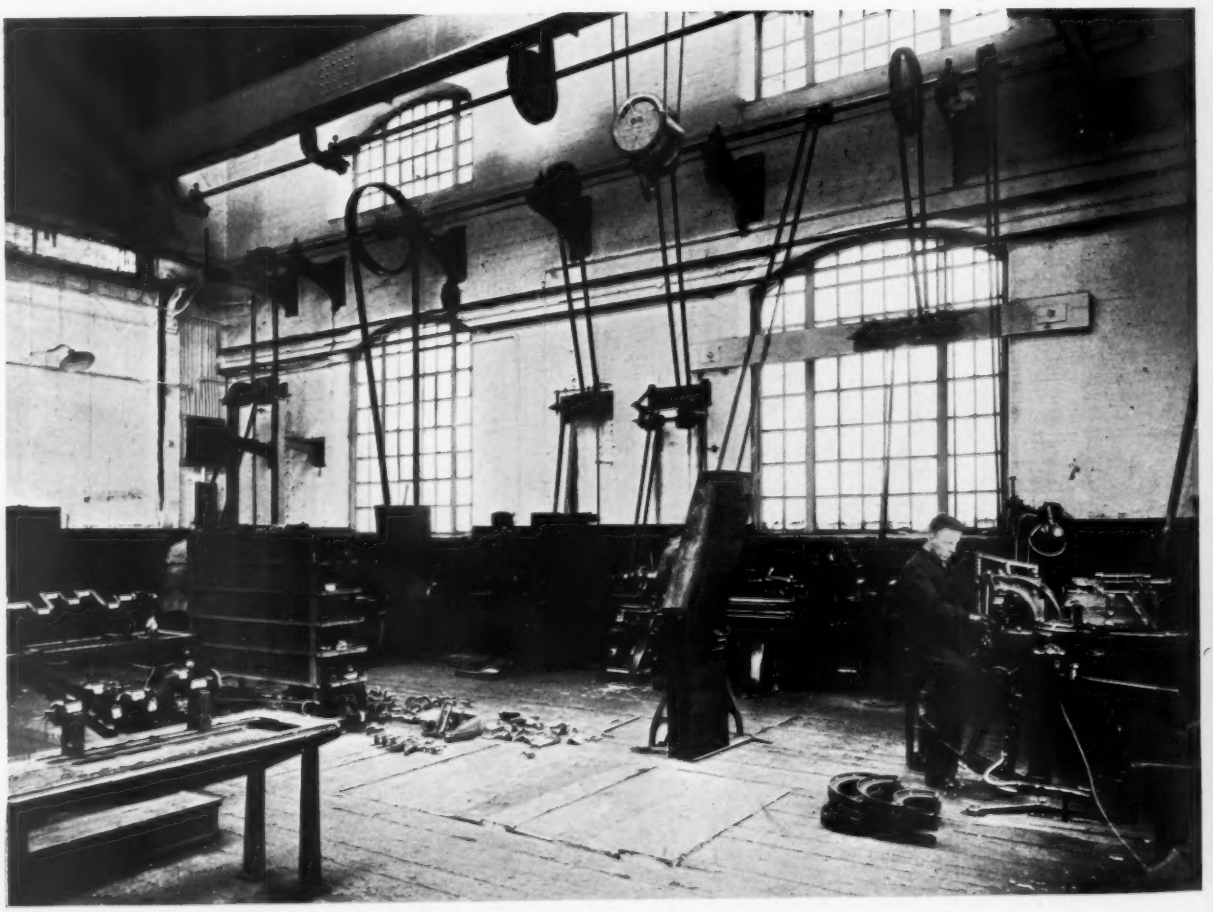


View of inspection and main work-pit ; note tyre, electrical, and welders' section on right

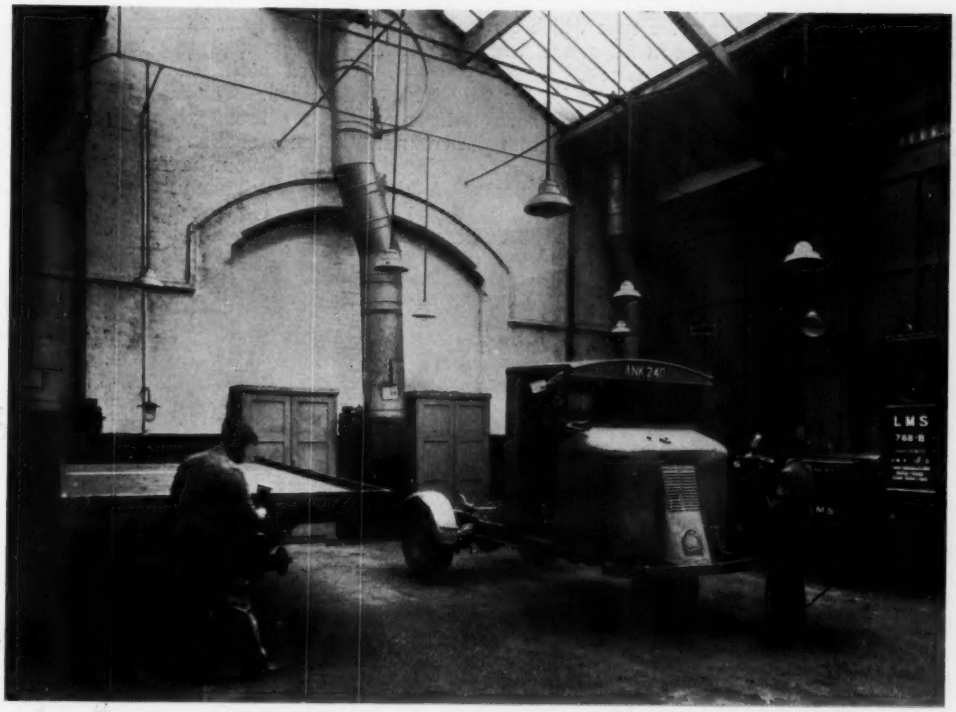


Left: Interior view of heating chamber showing large boilers for heating workshops and small ones for heating offices, mess-rooms, and so forth

Below: View showing corner of machine section



Right: Corner of paint shop showing extractors capable of dealing with 60 air changes an hour



Below: View of stores showing arrangement of bins and upper floor

Tools of a special or expensive type which are only occasionally in use are also kept in the stores, where they are readily available for issue as required.

The washing shelter is nearly 40 ft. long by 20 ft. wide, with a head room of 16 ft. Bulkhead waterproof electric lights, approximately 2 ft. 3 in. from the ground, are conveniently located, thus providing good lighting at the points most required for washing purposes. A high pressure electrically driven washing plant is housed in a separate building immediately behind the shelter, delivering water at a pressure of 300 lb. per sq. in. to a pipe running round the three sides of the shelter itself. An air line is also provided for the purpose of spraying a special compound used for cleaning the paintwork prior to a repaint.

The overhaul section is located in the bay which is spanned by the overhead travelling crane, and occupies about 100 ft. of the total length of 180 ft. . A defined area opposite the main entrance is allocated for stripping, a Crawshaw chemical collander for degreasing parts being close at hand. Alongside is a bench on which the various parts, after stripping and cleaning, are laid out for examination. White lines are used for marking the various unit assembly sub-sections, provision at present being made for four engines and four chassis to be dealt with at the same time. The work examiner's office is conveniently situated thus ensuring good supervision. A running in bench for testing engines after overhaul is provided; the engine undergoing test is coupled to a Walker dynamometer, the fan of which works outside the building on a small platform specially provided. The bodywork section is at one end of the overhaul shop, spanned by the overhead crane.

The whole of the main shop, approximately 120 ft. by 85 ft., is available for work other than that of overhauls proper, although naturally a certain amount of space must be kept free for manœuvring machines to the required positions. A very excellent system of pits is installed. The main group, six in number, is connected with a broad pit at one end, this being equipped with benches enabling the staff actually to do the underside work without having to come up to floor level. Each pit is approximately 15 ft. long and 13 ft. wide, and the depth of the deepest pit is 4 ft. 2 in., but this is reduced progressively in the case of the others to allow for drainage. The work pit or gallery is 67 ft. long, and has staircases at each end.

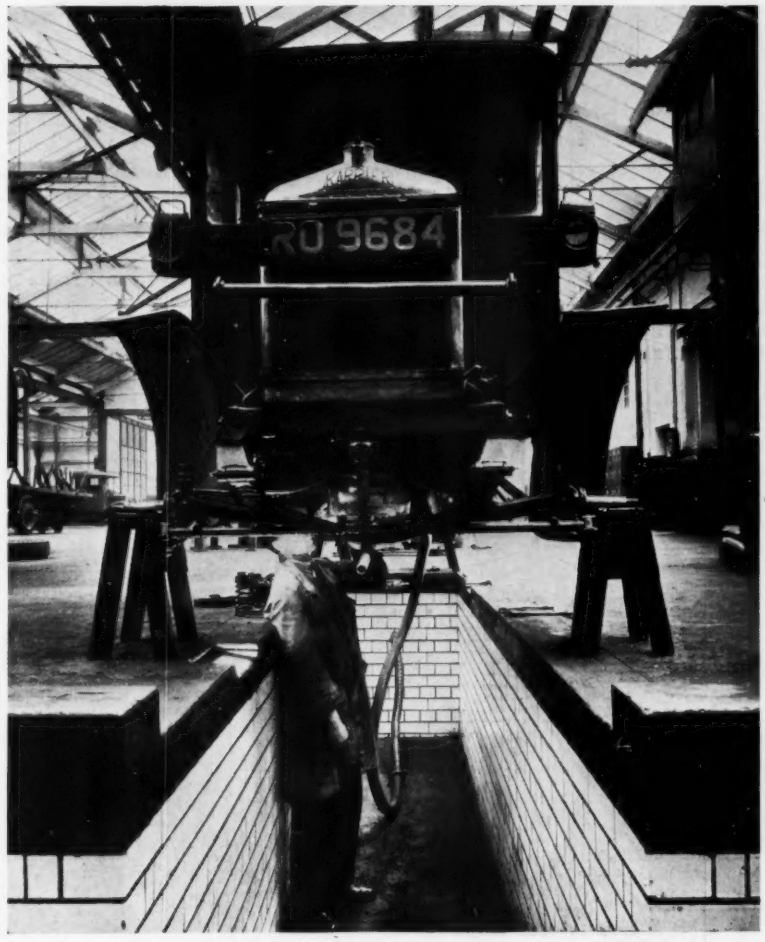
View of overhaul section

The pits are lined with glazed tiles and are well lighted by bulkhead Gabriel lights, and in addition there is a plug provided in each pit for connecting to a stand or hand lamp. An interesting feature is the provision in each pit of an exhaust nozzle coupling on a main pipe carried outside the shop; exhaust pipes of vehicles can be coupled thereto and the engines run indefinitely without polluting the atmosphere. The pits are spanned by two pillar cranes, each of 10 cwt. capacity, and an air line with suitable connecting points runs the length of the gallery. The foreman's hut is situated at one end of the gallery, thus affording a clear view. Two extra emergency pits are also provided close to the entrance to the stores.

The machine shop at Saltley is at the end of the overhaul section, thus being conveniently placed not only for this department, but also for the inspection shop alongside. Furthermore, is can be reached by the overhead travelling crane. The equipment and special machinery is practically the same as that already described in connection with the Kentish Town shop. The tyre, electrical, and welding sections are located behind the pits. The former is equipped, amongst other things, with a B.E.N.

air compressor, driven by a 5-h.p. motor, delivering air at a pressure of 150 lb. per sq. in. This compressor supplies air not only for inflation of tyres but for general shop use. An interesting point is that this compressor and the one used for the spray painting plant can be connected by means of a special valve, so enabling either to take over the full service should one fail.

In the paint shop provision is made for five vehicles to be dealt with at the same time. The shop itself consists of two sections, 36 ft. long and 24 ft. wide by 33 ft. deep. Provision is made for changing the air 60 times an hour, five large motor driven extractor fans being provided for this purpose. A B.E.N. spraying plant is installed, and there are four points in the shop to which the guns can be attached. The lighting is of the safety type, as are the switches, so that cellulose and other similar compounds can be used. The 4-h.p. air compressor is located conveniently alongside the shop. Sliding doors are provided at the front of the shop allowing uninterrupted access. Two small doors opening outwards are incorporated in order to comply with the latest Government cellulose regulations. Hot water basins and cupboard accommodation completes the equipment. A messroom 29 ft. by 23 ft., equipped with a gas cooker, water heater and sink is provided for the staff, other facilities consist of coat drying racks which can be raised from the floor, a numbered steel locker allotted to each man, covered cycle racks, a new ambulance lecture room, and excellent lavatory accommodation with hot water laid on.



View of inspection pit; note connection between vehicle exhaust system and main pipe to atmosphere

In the Birmingham road motor district there are approximately 700 vehicles and 400 trailers, comprising over 60 different types, this number not including a variety of miscellaneous machinery such as paint sprays, rail drills, welding plants, motor barge engines, &c., which are maintained by the road motor engineer's department.

Conclusion

Our inspection of the works and system left us with a very clear impression of the efficient manner in which the work to be performed has been planned and is carried out at both depots. The shops are well lighted and warmed, and seeing that they have been converted from locomotive uses to another and different series of operations, the best use has, we think, been made of the buildings available. The spacious yard between the lower building and the paint shop at Kentish Town, of which we give an illustration, is obviously a valuable asset, as a considerable number of vehicles can be assembled here prior to despatch, and manœuvred with ease to meet requirements. It was, moreover, obvious to us that the output of work from shops of this size and equipment is entirely satisfactory, and this, we think, is largely due to the very careful scheduling of the various operations, also to the arrangements made for the inspection of the vehicles and subsequent carrying out of the different tasks under close and thorough supervision.

ANOTHER LONDON TROLLEYBUS ROUTE.—On January 17 the London Passenger Transport Board brought into service a new trolleybus route, between Leyton (Markhouse Road) and Chingford Road (Crooked Billet). It is numbered 685 and replaces tram route No. 85 but extends about 1·3 miles further than the old tram terminus. London thus has now a total of 105 route miles of trolleybus services, whereas, at the close of the last financial year (June 30, 1936) there were 61 route miles. The mileage has therefore been increased by 44 miles—66 per cent.—in little more than 6 months. There are now 440 trolleybuses in service, but the board possesses authority to convert 80 miles more of tramways to trolleybus operation and the work is in hand. Moreover, this year Parliamentary assent is being sought to the introduction of trolleybuses on the remaining 148 miles of London tramways.

VISIBLE WARNING OF APPROACH.—In Germany, as in this country, motorists are forbidden to sound their horns at night, and it has been the practice for some time for drivers to give warning of their approach by flashing their headlights on and off. A device has now been perfected which converts the audible horn after dark into a visible horn, so that, as the horn button is pressed, instead of sounding, it connects with the headlights, causing them to flash four times in a second.

Buchanan Street Bus Station

A modern and well-equipped bus and coach terminus in Glasgow for services of the Scottish Motor Traction Co. Ltd. and associated companies

DURING the past few years the bus and coach services in the Clyde area, and throughout south-east Scotland generally, have been extensively reorganised and improved under the ægis of the S.M.T. group of companies, which, of course, are associated with both the L.M.S.R. and the L.N.E.R. Routes centring on Glasgow were formerly in the hands of a large number of small proprietors, most of whom have sold their businesses to the S.M.T. Outstanding improvements under the new ownership have been the regularisation of timetables and the standardisation of vehicles, and coincident with these developments has been the provision of bus stations to provide adequate terminal facilities in Glasgow and other large towns.

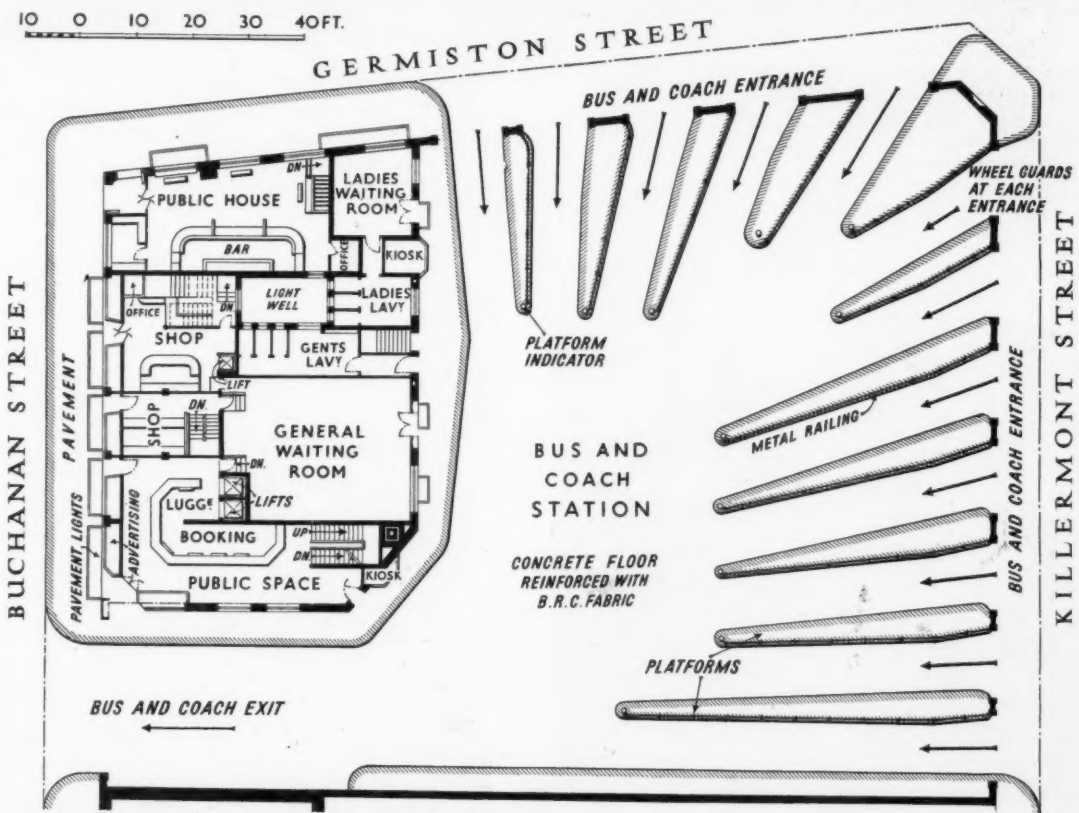
Frontage to Buchanan Street of the S.M.T. bus station, showing bus exit on right

The bus station we illustrate is that known as the Buchanan Street station, which was opened in December, 1934. It is situated at the north or top end of Buchanan Street, at the junction of that thoroughfare with Germiston Street, and extends through to Killermont Street. The site is therefore alongside the Buchanan Street railway terminus of the L.M.S.R. and quite close to Queen Street station, L.N.E.R. The frontage to Buchanan Street, some 108 ft., is shown in one of our pictures, from which it will be seen that it comprises the bus exit and a two-storied block of buildings housing the booking and inquiry offices of the different associated companies using the station. In these buildings also are waiting rooms and lavatories. The cloak room and parcels store are in the basement and are served by two electric lifts. The basement also includes rest rooms, and other facilities for drivers and conductresses. Women are employed extensively as conductors throughout the S.M.T. system, apart from the Edinburgh area, and perform their duties with tact and efficiency. In the basement also is the heating chamber with two separate boilers.

Behind the office buildings is a large area, 113 ft. 9 in. by 102 ft. 6 in., covered by a double-span roof carried entirely by the walls of the station so as to avoid any supporting columns in the floor space. The resultant lack of obstacles to manœuvring may be noticed from our interior view, which also shows the fire-protection equipment of Grinnell automatic sprinklers supplied by Mather & Platt Limited. This area is arranged for bus arrival and departure with twelve separate single-face platforms raised about 8 in. As buses can be entered only on the near side, it has been deemed advisable to use only one face of the platform, so that passengers need not step into the "roadway." Every platform accordingly has, along the back, a rail for the safety of passengers. Every bay has a separate entrance from either Germiston Street or Killermont Street, and the bays extend towards the exit into Buchanan Street, as shown on the accompanying plan.

On a normal day about 1,280 buses and some 15,000 passengers leave the station, but on exceptional occasions, such as the Glasgow Fair Saturday, the traffic increases to totals of 3,700 buses and between 90,000 and 100,000 passengers. An interesting feature of holiday loadings is that a much larger proportion of passengers joins the vehicle at the starting point rather than risk finding no

Interior of Buchanan Street bus station. The Grinnell automatic sprinkler equipment will be noted



General arrangement of the Buchanan Street bus station, Glasgow, of the Scottish Motor Traction Co. Ltd. and associated companies

accommodation when the bus is *en route*. Buses from this station serve the whole of the Clyde valley and practically all points north and east of the Clyde, such as Helensburgh, Stirling, Falkirk, Edinburgh, Peebles, Lanark, and Hamilton. Furthermore, vehicles of all the main companies of the S.M.T. group may be seen here, namely, the Scottish Motor Traction Co. Ltd., the Western S.M.T. Co. Ltd., the Central S.M.T. Co. Ltd., and W. Alexander & Sons, Ltd.

Apart from this local and semi-local traffic, the Buchanan Street bus station is also the terminus of a number of important long-distance bus and coach services, including those to Oban, Inverness, Aberdeen, St. Andrews, Newcastle-on-Tyne, Liverpool, Manchester, Blackpool, and London. Some of these are worked jointly with English bus companies, and thus the station also forms the Glasgow terminus for the Ribble Motor Services Limited. In addition, Buchanan Street has the distinction of providing the Scottish terminus for the longest regular coach service in the British Isles—that between Glasgow and London (some 392 miles), which is worked by the Western S.M.T. Co. Ltd.

B. & O. Road Terminal Facilities in New York

REFERENCE has been made more than once in these columns to the remarkable road connections whereby the Baltimore & Ohio Railroad transports its passengers into the heart of Manhattan Island from a terminus at Jersey City. As recently as September 25 last we recorded the completion of ten years during which these facilities have been successfully provided. Shortly afterwards the Baltimore & Ohio Railroad ordered from the White Motor Company of Cleveland, Ohio, 22 motor coaches for delivery on December 15 in time for the heavy passenger travel of the Christmas holidays, and one of the new vehicles is illustrated alongside. These have replaced those formerly maintaining the train-connection services both between the B. & O. terminal in Jersey City and its fourteen stations in New York City and vicinity,

One of the new pancake-engined coaches

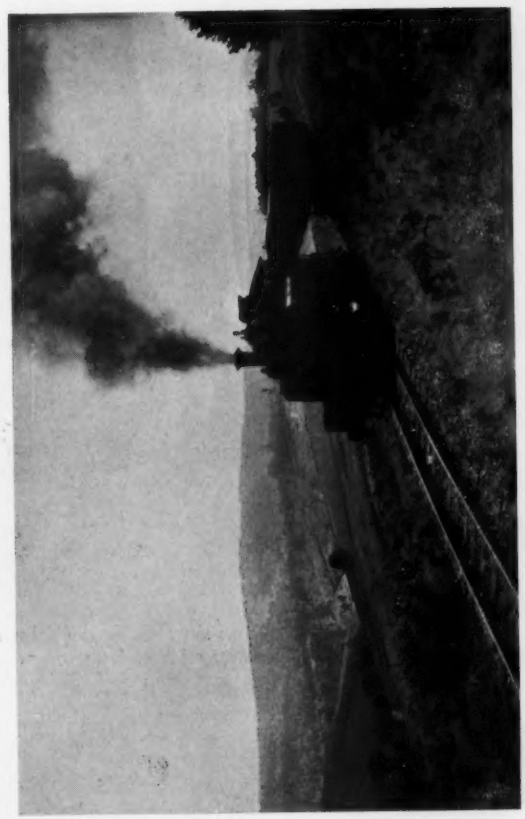
Main lobby and ticket office of the 42nd Street B. & O. motor-coach station, New York City

and also on the Newark-Elizabeth route, which is a similar service. These motor coaches have been specially designed to meet the needs of this type of service by engineers of the White Motor Company and the railway company. Streamlining, colour, and decorative plans follow novel lines evolved by Mr. Otto Kuhler, Consulting Engineer of Design of the B. & O.

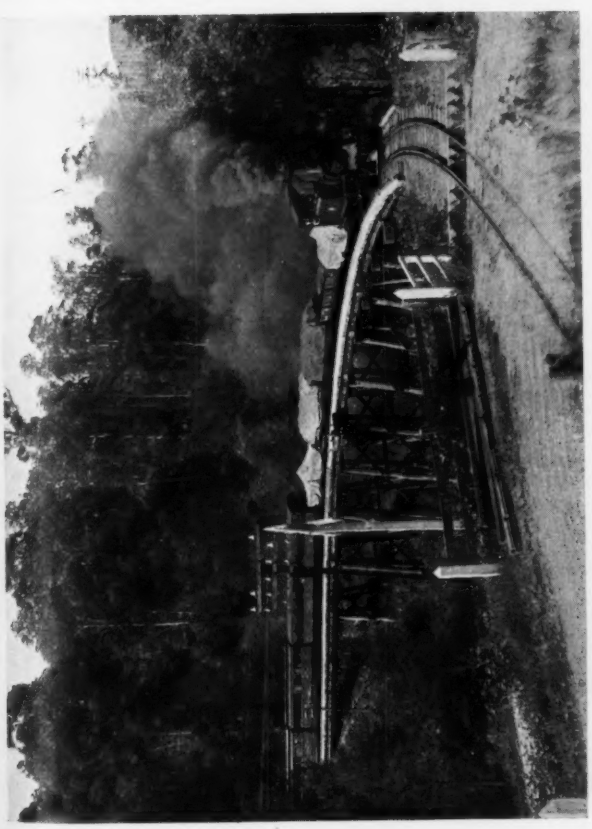
These vehicles are finished in royal blue colour, trimmed in black and dustproof grey, with gold lettering on the side panels and the new B. & O. emblem on the front of the radiator. The overall length is 28 ft. 11 in. and wheelbase 15 ft. 2 in. The bodies are built of aluminium alloys and steel. The engines for the buses on the Greater New York service, which are of the 12-cylinder pancake type and under the centre of the coach floor, have a maximum power of 145 h.p. Each coach has a seating capacity of only 22 passengers, as exceptionally ample space per passenger has been allowed. Seats, which are rubber-cushioned and finished in mohair, allow 19½ in. for each person, and a longitudinal spacing of 34½ in. is provided between the pairs. High ceilings afford not only full-door height for entrance and exit, but permit of passengers walking erect in the gangway. Indirect lighting in the top side panels provides ample light for reading. The coaches are air-cooled, and in winter are pre-heated before leaving terminals, and provided with heaters to maintain comfortable temperatures while *en route*.

Alongside we reproduce an interior view of one of the B. & O. bus stations in New York City which shows that these services afford a high standard of passenger comfort both at the terminus and *en route* to the train.

Stopping for water at wayside tank between Selby and Aura



Near the journey's end, between Cockatoo and Gembrook



Mixed train crossing Monbulk Creek trestle bridge between Belgrave and Selby

Passenger train descending incline between Aura and Clematis

FERN TREE GULLY—GEMBROOK (2ft. 6in. GAUGE) SECTION, VICTORIAN GOVERNMENT RAILWAYS

A typical scene on the Kiaochow (Tsingtao)-Tsinan Railway, in Shantung Province, China. Note the well kept locomotive and permanent way, trim formation, and general appearance of efficiency. *See paragraph on page 274*

Photos] [*Geoffrey Hicks*

Two unusual views of Brunel's last masterpiece, the Royal Albert bridge at Saltash, G.W.R. This famous single-track structure, spanning the river Tamar, joins Devon and Cornwall. It was completed in 1859 *when Isambard Kingdom Brunel was a dying man; he obtained a view of the completed work when he was drawn across it on a truck, but was too ill to attend the formal opening in May,* 1859, *and died on September* 15 *of the same year*

RAILWAY NEWS SECTION

PERSONAL

L.M.S.R. Appointments

The following appointments have been approved by the directors of the London Midland & Scottish Railway:—

Chief Civil Engineer's Department.

Mr. A. Shires, Inspector, Crewe, to be Resident Engineer (Bridges), Manchester.

Signal & Telegraph Engineer's Department

Mr. F. W. Whittingham, District Assistant, Abergavenny, to be District Assistant, Chester.

Mr. A. J. Fossey, Chief Inspector, Sowerby Bridge, to be District Assistant, Abergavenny.

Chief Mechanical Engineer's Department (Locomotive Department)

Mr. A. H. Nash, Resident Mechanical Engineer, Melton Constable (M. & G.N. Joint line), to be First Assistant to Works Superintendent, Derby (Locomotive).

Chief Mechanical Engineer's Department (Carriage & Wagon Department)

Mr. G. H. Banner, Divisional Inspector, Manchester, to be District Foreman, Lime Street & Edge Hill.

Mr. J. Walker, District Foreman, Barrow, to be District Foreman, Leeds.

Mr. A. Hindmarch, District Foreman, Carnforth, to be District Foreman, Carnforth & Barrow.

Mr. H. Crombie, District Foreman, Accrington, to be District Foreman, Lawley Street.

Mr. F. Townsend, District Foreman, Llandudno Junction, to be District Foreman, Llandudno Junction & Holyhead.

Mr. A. G. Smith, District Foreman, Ashton Road, to be District Foreman, Longsight.

Mr. H. Harper, District Foreman, Burton, to be District Foreman, Ashton Road.

Mr. G. E. Hawksworth, District Foreman, Derby, to be District Foreman, Burton & Derby.

Scottish Changes

Mr. W. A. Mather, Booking & Parcels Agent, Edinburgh, to be Assistant District Goods & Passenger Manager, Ayr.

Mr. E. Dennis, Stationmaster, Larbert, to be Booking & Parcels Agent, Edinburgh.

Mr. J. Cook, Chief Clerk, District Goods & Passenger Manager's office, Perth, to be Assistant District Goods & Passenger Manager, Perth.

Dr. Julius Dorpmüller, who, as announced in The Railway Gazette of February 5, has been appointed Minister of Transport in Germany, was born at Elberfeld in 1869, attended the Higher Schools of München-Gladbach and Aachen, and then studied engineering at the Technical High School in the latter city. In 1898 he joined the Saarbrücken Division of the Prussian State Railways, where he remained, latterly as Assistant Divisional Engineer, until in 1907 he was given permission to go to China. There he became Chief of the Operating Department of the Tsingtau division of the Shantung Railway, and in March, 1908, joined the staff of the Imperial Chinese State Railways, Tientsin-Pukow Section, as Chief Engineer in charge of the building of a new line, 700 km. in length, in the northern area. When China came into the war in 1917, Dr. Dorpmüller succeeded in getting home safely via Manchuria and Russia, and was given charge of some field railways in the Caucasus. He joined the Stettin Division of the Reichsbahn in 1919, and was later transferred to the newly-formed division at Oppeln, after the loss of Kattowitz. From 1922 to 1924 he was stationed at Essen and remained there throughout the trying time of the Ruhr occupation. In 1925 he was appointed Deputy General Manager of the Reichsbahn and took part in the London negotiations between the Powers; he became General Manager in the following year. Dr. Dorpmüller has also been Chairman of the board of the State Railway Company and of the new State Motor Roads Company, and, as explained in our last week's issue, he will continue for the present to act as General Manager and Chairman of the former. Reference was also made to him in our editorial note on page 222 last week.

Dr. Julius Dorpmüller,

Appointed Minister of Transport in Germany

Institute of Transport

The following members and associate members were elected during January: —

Members

Mr. G. W. Hayter, O.B.E., General Manager and Chief Engineer, Northern General Transport Co. Ltd.

Mr. Harris Watson, General Manager, Sheffield, Corporation Transport Department.

Associate Members

Messrs. J. N. Drummond, Pickfords Limited; and K. A. Kindon, L.N.E.R.; and Capt. D. McMullen, R.E., N.W.R. (India).

Road Motor Board Changes

Mr. P. M. Rossdale has resigned his positions as Chairman of the Yorkshire Traction Co. Ltd., and the Yorkshire Woollen District Transport Co. Ltd., but retains his seats on those boards.

Mr. J. S. Wills has been elected Chairman of the former concern, in place of Mr. Rossdale, and Deputy Chairman of the latter company.

Mr. W. S. Wreathall has been elected to succeed Mr. Rossdale as Chairman of the Y.W.D.T. Co. Ltd.

Mr. J. S. Wills has also been elected Chairman of the Hebble Motor Services Limited instead of Mr. Rossdale, who has resigned from this position too, whilst retaining his seat on the board.

Mr. R. G. Hudson has been appointed Marine Superintendent, Tanganyika Government Railways.

We understand that Mr. Albert Foulkes is to retire from the position he has held since 1926 of Chief Traffic Manager, Mersey Docks & Harbour

Board. For 50 years he has been in the service of the board, and, as Chief Traffic Manager, has supervised all railway traffic on the dock system.

Mr. M. A. Cameron, who, as announced in our issue of February 5, has been appointed District Passenger Manager, Leeds, L.N.E.R., was educated at Fettes College and Edinburgh University, and joined the London & North Eastern Railway in 1926. Subsequently he gained experience as a traffic apprentice and as temporary Assistant Yardmaster, West Hartlepool (1929) and, after a brief period in the Chief General Manager's office, joined the office of the Passenger Manager, Southern Area. In 1933 Mr. Cameron was made head of the special section for dealing with pooling arrangements, and was closely concerned with mechanisation of the accounting work in the parcels offices at King's Cross, Liverpool Street and Nottingham, Victoria. He was in charge of the Northern Belle during the tours in 1934 and in the following January was appointed Assistant District Passenger Manager, London, L.N.E.R., the position he now vacates to go to Leeds, on promotion as District Passenger Manager there.

Mr. Sydney J. Page, M.C., LL.B., who, as announced in THE RAILWAY GAZETTE of January 22, has been appointed to succeed the late Mr. E. W. Rowntree as Assistant Secretary in charge of the Secretarial Department of the Ministry of Transport, was born in 1892 and educated at Douglas High School and King's College, London University. He is a graduate in Law. In 1915 he was commissioned in the Army and saw service until 1919, being twice wounded and awarded the Military Cross. After serving in the Estate Duty Office and later as an Inspector of Taxes in the Inland Revenue Department, Mr. Page was appointed to the Ministry of Transport in 1919. From that year until 1921 he was Secretary of the Rates Advisory Committee, and has subsequently been Secretary of the Railway Rates Tribunal until now. He was also Secretary of the Railway Pool Committee in 1932.

We regret to announce the death, on February 8, of Mr. John Forbes, who retired on December 31, 1923, from the position of Assistant Superintendent of the Line, London Brighton & South Coast Railway. He joined that railway as a junior clerk, and, after gaining experience in all branches of general work at stations, was transferred to the General Manager's office. Thereafter he went to the office of the Superintendent of the Line to take charge of the excursion section, and in 1907 was appointed Indoor Assistant Superintendent. It was in 1920 that Mr. Forbes was promoted to be Assistant Superintendent of the Line, the position he held until his retirement under the grouping arrangements of the

Mr. M. A. Cameron,
Appointed District Passenger Manager, Leeds, L.N.E.R.

Mr. Sydney J. Page, M.C., LL.B.,
Appointed Assistant Secretary in charge of the Secretarial Department, Ministry of Transport

The late Mr. John Forbes,
Assistant Superintendent of the Line, L.B.S.C.R., 1920-23

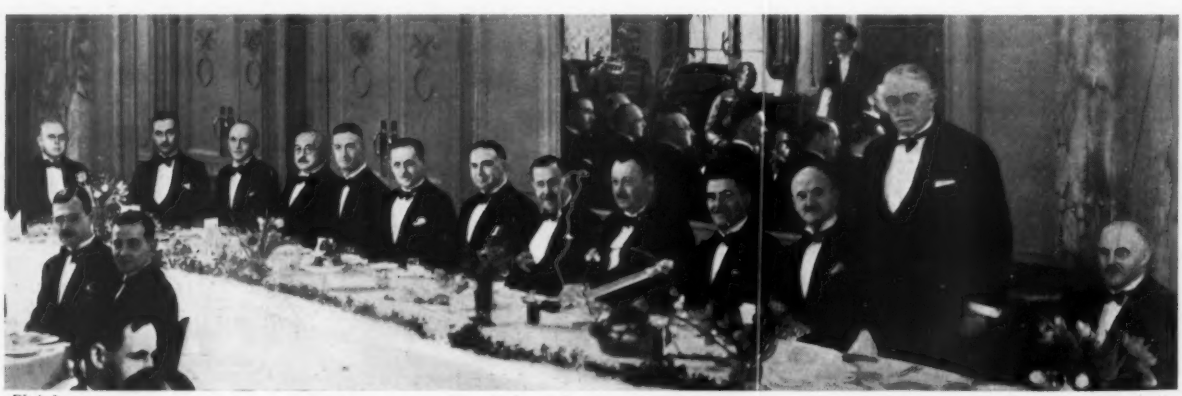


Photo.] [*Swaine*

Group at the 9th annual dinner of the officers of the Supplementary Reserve, Transportation Units, Royal Engineers, held on Friday last at the Abercorn Rooms (*see report opposite*)

Southern Railway. He was 72 years of age. The funeral service will be held at St. John's Church, Meads, Eastbourne, at 1 p.m. today (February 12).

Mr. David McK. Ford has been appointed General Purchasing Agent, Canadian National Railways.

We regret to note the death, on February 9, of Sir Samuel Kelly, C.B.E., D.L., a Director of the Belfast & County Down Railway.

Mr. Percy Grant, late Managing Director of Vickers Train Lighting Co. Ltd., whose death we announced in our issue of January 1, left estate valued at £30,248 (£29,811 net).

Dr. T. P. Berry, M.D., L.R.C.P., sometime Chief Medical Officer of the G.W.R. Medical Fund, Swindon, whose death we recorded in our issue of November 13 last, left estate valued at £13,681 (£13,614 net).

We note with regret the death, on February 7, of Mr. G. G. Eady, O.B.E., a well-known railway surveyor and consulting engineer. He was employed on several Argentine railway surveys including the Transandine line, and on others in many parts of the world including the Trans-Siberian.

Mr J. M. Eddy, C.B.E., a Director of the B.A. Great Southern, B.A. Western, and B. A. & Pacific Railways, arrived in Buenos Aires on January 17, on a business visit. On January 19, Mr. Eddy, who was accompanied by Dr. G. E. Leguizamon, Chairman of the Local Boards of the B.A.G.S. and B.A.W.R., was received in audience by the President of the Republic at Government House.

MR C. J. BROWN: AN APPRECIATION

The following are extracts from a very apposite appreciation of Mr. C. J. Brown, the recently retired Engineer, Southern Area, L.N.E.R., contributed to the *London & North Eastern Railway Magazine*:—

"It would be easy to write a whole book setting out in cold print what Mr. Brown has contributed to his profession during his long career as an engineer. He is a strictly professional man, disliking publicity, and those outside the engineering profession do not appreciate, perhaps, that as long as railways remain, they will be indebted to Mr. Brown for his pioneer work in many directions—a contribution to the world of railway engineering made possible by an extraordinary combination of technical ability and courage borne of confidence.

"Apart from standards he has set and methods he has introduced, both as a railway representative closely associated with the British Standards Institution, and otherwise, it must be a satisfaction to Mr. Brown to recall that in the shape of new railways, stations and bridges in the north and south, he is leaving behind him permanent monuments to his technical skill.

"Mr. Brown was always a strict disciplinarian, and many engineers now scattered throughout the world are indebted to him for their early training. It is interesting to recall here that during his earlier career in the north two of his able lieutenants were Mr. Fraser, now Engineer (Scotland), and Mr. Inglis, his successor in the south.

"What seemed to be the strongest traits in Mr. Brown's character were early detected by those who came into contact with him. His natural calm was very difficult to ruffle, he never hesitated to accept responsibility on behalf of his subordinates, and many a sorrowing assistant or junior discovered his uncomfortable, if not uncanny, gift of lighting on a mistake if such there should be in either plan or document.

"It might hardly be professional to suggest that a Chief Engineer could endear himself to his staff, technical or otherwise. Let us put it, therefore, that the trait in his character, the memory of which will long outlive him, was the capacity for infinite trust in his subordinates unless they abused his confidence.

"Any appreciation would not be complete without some reference to the fact that Mr. Brown is probably one of the most conscientious individuals it has been our privilege to meet. Throughout his long career it is safe to say that everybody knew that Mr. Brown never acted except in what he believed were the best interests of the company he served.

"Let us, therefore, while regretting the retiral of a great engineer and a fine gentleman, wish him as good health out of harness as he has enjoyed during many years of strenuous work."

THE RAILWAY GAZETTE cordially endorses these sentiments and adds its good wishes to Mr. Brown in his retirement.

Royal Engineers Transportation Units

(See illustration opposite)

Colonel Sir Herbert A. Walker, K.C.B., T.D., General Manager, Southern Railway, and Hon. Colonel S.R. Transportation Units, R.E., presided at the ninth annual dinner of the officers of the Supplementary Reserve Transportation Units, Royal Engineers, which was held at the Abercorn Rooms, Liverpool Street Station Hotel, London, last Friday.

Those present were: Captain R. E. Bagnall-Wild, R.E.; Major S. L. Baister; Captain G. S. Bellamy; Captain A. de G. Best, R.E.; Major R. P. Biddle; Major F. T. Biddulph, M.C., R.E.; Lieut. H. T. Bird, R.E. (S.R.); Captain J. Blundell, R.E. (S.R.); Mr. A. F. Bound; Lieut. K. Brinsmead, R.E. (S.R.); Captain C. E. A. Browning, R.E.; Mr. E. G. Brunker; Captain P. D. G. Buchanan, R.E.; Lieut. T. D. Burdis, R.E. (S.R.); Lieut. A. N. Butland, R.E. (S.R.).

Lieut. W. T. Calvert, R.E.; Lieut. A. H. Cantrell, R.E. (S.R.); Colonel R. Carpmael, O.B.E.; Mr. H. J. Chetwood; Major A. B. Chester, R.E. (S.R.); Major E. C. Cookson, R.E. (S.R.); Major L. F. S. Dawes, M.B.E.; Captain A. T. de Rhé Philipe, R.E.; Lt.-Colonel J. V. Denning, M.C., R.E. (S.R.); Mr. C. W. Edwards; Major R. Edwards, R.E. (S.R.); Lieut. C. M. Field, R.E. (S.R.); Mr. H. W. Greany.

Mr. F. E. Harrison; Brig.-General Sir Harold B. Hartley, C.B.E., M.C., M.A., F.R.S.; 2nd-Lieut. W. J. Hartnell, R.E. (S.R.); Captain C. E. M. Herbert, R.E.; Major F. Holland (late S.R.); Lieut. H. L. Hopkins, R.E. (S.R.); Captain V. R. Illingworth, R.E. (S.R.); Captain E. N. B. Jeffery, R.E. (S.R.); Mr. J. A. Kay; Captain L. J. M. Knotts, R.E. (S.R.); Major C. A. Langley, M.C., R.E.; Lieut. G. A. Lemon, R.E. (S.R.); Lieut. C. R. A. Linton, R.E. (S.R.); 2nd-Lieut. E. J. M. Matheson, R.E. (S.R.); Colonel L. Manton, D.S.O., O.B.E.; Mr. J. Millar; Major L. E. Marr, R.E. (S.R.); Lt.-Gen. Sir Reginald S. May, K.B.E., C.B., D.S.O.; Lt.-Colonel D. J. McMullen, D.S.O., R.E.; Mr. R. A. Mills; Lieut. H. G. Neale, R.E. (S.R.); Captain G. A. Palmer, R.E.; Captain C. P. Parker, M.C., R.E. (S.R.); Major E. L. Parkes, R.E.; Lieut. A. C. J. Payne, R.E. (S.R.); Captain J. S. Payne, R.E.; Major J. R. R. Price.

Major A. S. Quartermaine, M.C.; Lieut. J. Ratter; Major V. A. M. Robertson, M.C.; Major H. F. Sanderson, R.E. (S.R.); Lieut. L. S. Sanson, R.E. (S.R.); Major C. Schlegel; Major J. Scott, R.E. (S.R.); Captain A. J. Scott, R.E. (S.R.); Colonel H. A. Short, M.C.; Captain F. C. C. Stanley, R.E. (S.R.); Lieut. S. Stevens, R.E. (S.R.); Lt.-Col. G. S. Szlumper, C.B.E., T.D.; Lt.-Col. R. Tandy, R.C.S. (S.R.); Lieut. S. M. Taylor, R.E. (S.R.); Lieut. M. B. Thomas, R.E. (S.R.); Captain R. Thompson, R.E. (S.R.); Colonel W. G. Tyrrell, D.S.O.; Major R. D. Waghorn, R.E.; Captain R. J. Walker, R.E.; Colonel Sir Herbert A. Walker, K.C.B., T.D.; Major-General W. K. Venning, C.B., C.M.G., M.C.

During dinner a programme of music was performed by a portion of the Band of the Royal Engineers, by permission of the Officers of the Corps.

The Chairman gave the Loyal Toast and announced that as was customary there were to be no set speeches, but he called upon Lt.-General Sir Reginald S. May, Quartermaster-General to the Forces, Lt.-Colonel D. J. McMullen, the new Commandant at Longmoor, and Colonel W. G. Tyrrell, Assistant Director of Transportation, to say a few words.

Sir Reginald May testified to the great importance of the Supplementary Reserve Transportation Units. In effect they were part of the regular army, and by their annual training made it possible for their specialised and practical knowledge of railway construction and operation to be available for military requirements should necessity arise.

Lt.-Colonel McMullen gave an interesting account of his recent experiences in Palestine, and the valuable work done there by members of the Supplementary Reserve in operating the railways.

Colonel Tyrrell referred to his early experiences at Longmoor, and although it was probably his last appearance at these annual dinners in an official capacity, he would continue to take the keenest interest in the work done at Longmoor and hoped to be present on future occasions.

Argentine National Transport Co-ordination

Text of the Measure

The following is the text of the above Bill, a précis of which appeared in THE RAILWAY GAZETTE of January 8 last and which was passed by the Senate on January 5:—

The Constitution of the Commission

Art. 1.—The National Commission of Transport Co-ordination, which is hereby created, shall consist of the following seven members: A president, of Argentine nationality nominated by the Government with the approval of the Senate, who serves for a term of four years and is eligible for re-election, with a monthly salary of $2,000 paper; the President of the National Roads Board; the General Manager of the State Railways; the Director of Navigation and Ports; the Director-General of Railways; a representative of the private railways; and a representative of the motor transport companies. The two last-mentioned shall serve for four years, and may be re-elected. They shall be nominated by the Government from a list of ten candidates selected by the respective entities. Except the president, all the members of the commission shall hold their posts in an honorary capacity.

Granting of Permits for Road Services

Art. 2.—All persons or companies proposing to operate road services for the transportation of passengers, goods or parcels on behalf of third parties within the national territories, between these and the provinces, between different provinces or between the provinces and the Federal Capital, must obtain a permit from the National Commission for the Co-ordination of Transport.

Public road services which operate by virtue of municipal or provincial concessions, and which, owing to their inter-communication between two or more provinces, may in the future be brought under the present law, shall have the right to continue the service they have been rendering for a term of five years, for which purpose they must comply with the regulations established by the law within a period of 180 days. The conditions which may be stipulated by future regulations regarding the characteristics, capacity, dimensions, &c., of the rolling stock, shall not be applicable to that which may have been in use for a term of two years previously. Existing tariffs may not be augmented, other than in the proportion necessary to cover the difference between the present licences and rates and those resulting from the application of the new law.

The National Transport Commission shall decide what is to be understood by public road transport motor services for the purposes of this law, having regard to the importance and regularity of the service rendered. In no case shall the provisions of the present law be applied to the transport of merchandise conveyed in vehicles belonging to the seller or the buyer. Neither shall they be applicable to the operators of a single vehicle, nor to those who only effect transport occasionally on behalf of third parties.

Powers of Provincial or Municipal Authorities

Art. 3. The provinces or municipalities may regulate the traffic of passengers, goods or parcels by local services, whose terminal points are situated within their territory, whatever roads they use, but such regulations may not affect the inter-provincial transport governed by the present law and its by-laws. In no case shall road transport be subject to more than one jurisdiction, except for the right pertaining to the municipalities to fix routes and regulate the traffic within the urban zone of the municipality.

Objects of Co-ordination

Art. 4. The commission created by the present law shall co-ordinate all the means of transport by water and land so that they shall serve more efficiently the public interests and the national economy. With this object, in granting the permits referred to in Art. 2, it must consider:—

(*a*) Public requirements in the zone in which it is proposed to establish the new services, and the possibility of these being satisfied by established carriers and the services already available, or whether improvements might be effected by making improvements in existing timetables, an increase of speed, the reasonable reduction of tariffs, or the addition of necessary services or the suppression of inconveniences

(*b*) The necessity of safeguarding the present and future efficiency of the means of transport existing in the zone, and endeavouring to avoid the superimposition of systems where such would prejudice the general economy

(*c*) The possibility of co-ordinating with other means of transport in the zone

(*d*) Other economic factors it may be desirable to consider when granting or refusing permits

(*e*) In every case preference must be given to the transport which effects a continuous service under the best conditions of price and time.

Licensing

Art. 5. Every transport undertaking which has obtained a permit from the National Transport Commission shall be exempt from the payment of the national and municipal licences of the Federal Capital and the national territories, always provided that they pay the rates established by the Government for the upkeep of the roads. With the exception of vehicles pertaining to the nation, the provinces, or municipalities, no motor vehicle may operate on public streets or roads without having paid the customs, naphtha and oil taxes established by law or which may be created in future. The rates for the upkeep of the roads are fixed at between $100 and $400 paper per annum for each unit in circulation, and shall be levied in accordance with the regulations to be dictated by the Government. Failure to pay such rates shall be sufficient cause for declaring the permit forfeited. The Government shall arrange with the provinces interested the question of exemption from provincial or municipal licences, and the distribution of the amount collected in respect of the rates referred to.

Determination of Tariffs

Art. 6. The tariffs for passengers, goods and parcels of every transport undertaking, except the railways, must be submitted to the approval of the National Transport Commission, the existing tariffs ruling in the meantime. A similar regulation shall govern the modification of those already approved, respecting the rights of jurisdiction of the provinces and municipalities stipulated in Art. 3. The National Transport Commission shall apply to the National or Provincial Government, as the case may be, for the revision of the railway tariffs, when such is necessary for the purposes of the co-ordination of transport in the different zones of the country.

Obligations of the Transport Undertakings

Art. 7. The transport companies shall be obliged to receive and transport all merchandise offered to them, in accordance with the regulations of the Commercial Code relating to public carriers.

Guarantee Deposit for Road Operators

Art. 8. Every application for a permit to establish transport service by road must be accompanied by a certificate of deposit in the National Bank of national bonds as a guarantee of the applicant's ability to comply with the obligations imposed, and to cover any possible indemnity. This guarantee shall not be less than 10 per cent. of the capital assigned on the establishment of the service.

Function of the Government

Art. 9. The Government, after receiving the report of the National Transport Commission, shall regulate the conditions under which the transport of passengers, goods and parcels must be effected, as also the supervision to which the transport undertakings, in their relations with the public and with the co-ordinating organisation, shall be subject.

Conditions of Permits

Art. 10. The transport concerns which obtain permits from the National Transport Commission shall be obliged

to comply with the following conditions:—

(*a*) To accept the transport of persons and goods they are authorised to carry, without giving preference by reason of time or place;

(*b*) Not to charge for such transport a price different from that established in the tariffs approved by the National Transport Commission. The price may only be received in money or by cheque;

(*c*) Not to accord differential treatment to any shipper without the special authorisation of the National Transport Commission;

(*d*) To carry out such transport over the routes and at the speed authorised by the National Transport Commission;

(*e*) To furnish to the National Transport Commission all the statistical data required concerning the financial working of the undertaking;

(*f*) To insure their risks and those of the persons and goods they carry, including third-party risks;

(*g*) The transport of persons or goods belonging to the State shall be subject to a rebate of 50 per cent., which must be given effect to by the holder of the permit up to a limit not exceeding 5 per cent. of the useful capacity of each unit in the service of the transport companies.

(*h*) Every undertaking which obtains a permit from the National Transport Commission is obliged to carry free of charge over the whole of its route a uniformed postal employee, entrusted with the care of roadside telegraphs.

Existing Legislation

Art. 11.—The existing laws and regulations concerning the different means of transport shall be applied in every respect which is not expressly modified by the present law, except fines for infractions, which shall vary between $50 and $5,000 paper, in accordance with the regulations to be dictated.

Labour Questions

Art. 12.—The National Commission for the Co-ordination of Transport, within a term of not more than two years, counting from the promulgation of the present law, shall present to the Government for submission to Congress, a Bill regulating the working hours of the personnel in the service, salaries and other conditions relating thereto, which have not so far been the subject of legislation.

Financial Estimate

Art. 13.—The National Commission for the Co-ordination of Transport shall submit to the Government within six months, the estimate of expenditure of the department, to be submitted in due course to Congress, and it shall also apply to the Government for the necessary office staff.

The expenditure which compliance with this new law calls for shall be paid out of general revenue, until such time as it is included in the national budget. See editorial note on page 266.

RAILWAY AND OTHER MEETINGS

Westinghouse Brake & Signal Co. Ltd.

The ordinary general meeting of the Westinghouse Brake & Signal Co. Ltd. was held at Winchester House, Old Broad Street, E.C., on February 9, the Rt. Hon. Lord Southborough, G.C.B., G.C.M.G., G.C.V.O., K.C.S.I., Chairman of the company, presiding.

The Secretary (Mr. J. Griffith Hall) read the notice convening the meeting and the auditors' report.

The Chairman, in moving the adoption of the report and accounts, recalled that this was the fifty-sixth meeting of the company, it having been founded by George Westinghouse in 1881. Since then, with the help of many men of eminence, it had held a conspicuous place in the engineering world, both here and in America.

The profit for the year under review was £260,765, compared with £175,456 in the previous year. The fortunes of the subsidiary companies had improved, all but one having made a profit, and so there had been brought back to the profit and loss account £16,496 from the reserve provided for the losses of these subsidiaries. The transfer, added to the trading profit of £244,269, gave a total profit for the year of £260,765, and with the £42,667 balance of profit brought forward from the previous year an amount of £303,432 was available—a record for the company. It was, however, most desirable that the general reserve of the company should be built up, and so £70,000 had been added, thus increasing the reserve to £250,000.

To sum up the position, there was £303,432 available, out of which £115,000 had been placed to reserves, leaving £188,432. The directors recommended payment of a dividend of £10 per cent. and a cash bonus of 5 per cent. for the year, both subject to income tax, which would absorb net £128,371, leaving a carry-forward of £60,060.

The active improvement policies of the British railways had been the source of large orders for the company's specialised signalling, brake, and heating apparatus. Almost all trolleybuses, too, were fitted with Westinghouse brakes. Orders for the company's metal rectifiers had increased considerably, and thanks to active development work new and productive fields were being entered.

The Polish contract was progressing most satisfactorily. In a few months 50 per cent. of the contract would be completed. The company's relations with all concerned were excellent and they desired to thank their Polish friends for their co-operation and assistance. The company was making deliveries six weeks ahead of the contract date and had every reason to be well satisfied with the position. Captain Peter was indefatigable in visiting the Continent, and the tax upon his time and energy had become all the heavier in consequence of the increase in his responsibilities over here, but they were fortunate in having in him a first-class administrator.

Concluding with a review of the company's prospects, the Chairman said the current financial year promised to be a good one. Orders on hand were higher than in January last year, and the company was deriving increasing benefits from its new plant.

Mr. H. G. Brown (Deputy-Chairman) seconded the adoption of the report and accounts, and the resolution was carried unanimously.

Captain B. H. Peter then gave an outline of the work the company had on hand. Large orders for the company's usual forms of brakes were being dealt with. The Westinghouse electro-pneumatic braking system for high-speed and high-frequency traffic had undergone important development, and he thought it would be of very great value in the future. Braking problems far beyond anything encountered before were involved by the increasing use of very high-speed steam and diesel trains, and the company was working in close co-operation with its associates to develop means of meeting the new requirements.

Apart from Poland, other countries such as China, New Zealand, and so on, were using more and more braked freight trains, and in this country very large numbers of wagons were having brakes added to them annually. Within the next few days the company expected to add another country to the list of those which had adopted the Westinghouse brake, as Lithuania had decided to do so and would start on the equipment of something over 1,000 wagons.

On the signal side the Southern Railway had successfully opened a very great installation at Waterloo, and the whole of the lines extending from there to Wimbledon were equipped with their materials. The company had been fortunate in receiving another important contract from the L.N.E.R., covering all tracks between Northallerton and Darlington. Other signalling work extended all over the world. New Zealand, China, and other countries had sent important orders and the constant development and extension of the Underground Railways in London had kept the company busy.

The company had entered upon a big programme of factory extension in 1934, and so it had been possible to speed up production very quickly. In 1935 another 50,000 sq. ft. had been added to the floor area of the factory, and a further 70,000 sq. ft. had been added in 1936. Last year had seen a record output, and this year it would be their aim to beat the record again.

XUM

Staff and Labour Matters

Road transport wages

The committee appointed by the Ministers of Labour and Transport to consider the regulation of wages and conditions of service of persons employed in the road transport industry (goods) sat in public at 5, Old Palace Yard, London, S.W.1, on Thursday and Friday last, February 4 and 5.

Views of Traders' Co-ordinating Committee. — A memorandum of evidence was submitted by the Traders' Co-ordinating Committee, which, it was explained, "is composed of the great national trade organisations which represent the industries and commerce of the country." The committee represents users of transport as distinct from providers of transport. It was further explained that the "Memorandum presented by the Traders' Co-ordinating Committee has not been adopted by the Federation of British Industries, as the Federation is by its constitution unable to deal with questions of rates of pay, hours, and similar labour matters." It has, however, placed on record its considered view that such road users as now operate under "C" licences should not be subjected to limitations and restrictions in the management of their own transport.

The memorandum of evidence was also supported by a large number of trade organisations, including the following:—

Association of British Chambers of Commerce, British Federation of Master Printers, British Ironfounders' Association, Federated Quarry Owners of Great Britain, Incorporated Federated Associations of Boot and Shoe Manufacturers of Great Britain and Ireland, London Chamber of Commerce (Incorporated), Mining Association of Great Britain, Mansion House Association on Transport (Incorporated), National Chamber of Trade, National Federation of Clay Industries, National Federation of Grocers' and Provision Dealers' Associations, Traders Traffic Conference, National Gas Council of Great Britain and Ireland, Society of Motor Manufacturers and Traders Limited, United Tanners' Federation, and the Wool Textile Traders' Railway Association.

It was contended that the question of "C" licence holders is entirely different from that of a person who, either wholly or partially, plies for hire of his vehicles or of the accommodation contained in them. A very large number, in fact it has been estimated as possibly 70 per cent. of the whole of the "C" licensed vehicles, is used by retail tradesmen very largely in taking to their customers' doors the goods which have been ordered from day to day, and in these cases it is quite clear that when the round has been finished the man who drove the vehicle is often occupied in another class of work altogether. In other cases the "C" vehicle is used by its owner almost as a shop, and the driver is engaged in selling the goods and collecting in many cases the money for those goods, and therefore is not an ordinary transport driver in the proper sense of the word. Inasmuch as the owner of the "C" licensed vehicle is not entitled to ply for hire or reward, the view that he is in competition with the public carrier is not accepted. It was urged that "no alterations should be made to the existing law, as appearing in the Road and Rail Traffic Act, 1933, in relation to the private carrier under 'C' licence."

Sir James Ballie, the Chairman of the Government Committee, said that the question of public safety and public welfare was bound up with the health and conditions of the drivers. A representative of the Traders' Co-ordinating Committee, in reply to a question put by Sir James Ballie, replied that the committee believed in adequate wages and conditions, but did not agree that wages and conditions were necessarily bound up with public welfare and safety.

Sir James observed that if a lorry driver "is not sufficiently paid, is he likely to have sufficient strength? Is it not plain sense that a man must be in a healthy condition and to be in that condition he must be properly paid?"

The Newspaper Society.—Evidence was given on behalf of the Newspaper Society, which represents the proprietors of about one thousand morning, evening, and weekly newspapers in the United Kingdom and the Irish Free State. The Scottish Daily Newspaper Society, representing the morning and evening newspapers of Scotland, is associated with the Newspaper Society in its evidence. The London daily and Sunday newspapers are not represented by the society. It was submitted that the existing system whereby each office makes its own arrangements as to wages and conditions, hours, &c., of employment, should continue.

In the newspaper industry, wages and conditions of employment generally are regulated by agreements between the Newspaper Society and various operatives' trade unions. Where ancillary workers such as transport workers, engineers and electricians are employed, their general conditions and hours of labour naturally tend to approximate to the standards established in newspaper offices. This condition of affairs in relation to transport workers is, in the society's submission, not only natural, but also most desirable. A transport worker in the newspaper industry is a newspaperman, and not a member of the road transport industry, and the general conditions, hours and wages may be, and in many cases are, governed by the non-driving portion of his work rather than by actual driving duty, which may occupy much less time per week than otherwise. The society submitted that the specialised character of newspaper road transport, and the varied and specialised nature of the employment of many of the drivers, make it both impracticable and undesirable that the wages and conditions of employment of newspaper transport workers should be regulated or in any way affected by arrangements made in the road transport industry or any other industry.

The General Secretary of the society said they regarded theirs as being classed among the well-organised industries. Because of the essence of time in delivery, he suggested that their industry had rather a special case to submit for flexibility in its transport arrangements. They considered that, on the whole, these were very good. From their examination they found that the wages were as good as, and in some cases better than, those paid in the transport industry. The Chairman asked the witness whether he would have any objection to the rates of his transport workers being made to conform to the rates of wages fixed for motor transport workers generally. The reply given was that he did not think they would be afraid of it, but they would object to the principle of enforcement by an outside body.

London Chamber of Commerce.—Evidence was given by the London Chamber of Commerce (Incorporated), which has a membership of firms, companies, and individuals totalling 8,411. In addition there are 45 affiliated trading associations, and the total representation of firms is approximately 60,000, consisting, in the main, of manufacturers and merchants. Many members are users of road transport either by means of the facilities offered by "A" and "B" licence holders, or by their own vehicles authorised under "C" licences. In so far as wages and conditions of service of drivers of "A" and "B" licensed vehicles are concerned, the chamber feels that the negotiations should be left to the trading organisations whose members are principally concerned with supplying transport, though it wishes to point out that a satisfactory solution of the problem in this section is of prime importance in order to ensure that an economic and efficient transport service is made available in its particular sphere to trade and industry.

The chamber submitted that the compulsory control of wages of "C" licence holders today "is as impracticable as it was in 1933." The memorandum stated that "The chamber has been impressed with the information it has received from traders owning a small number of vehicles, which indicates that the wages paid today are quite comparable, and in many cases higher, than the statutory wages paid for 'A' and 'B' licence drivers. . . . The chamber has obtained from 258 firms who are representative manufacturers and merchants certain particulars as to the wages and conditions of service of their drivers. These firms own 5,373 vehicles authorised under 'C' licences and

employ 4,833 full time and 410 part time drivers. Of the full time drivers 88 per cent. and of the part time drivers 90 per cent. are paid Trade Union or Trade Board rates of pay, or wages equal to or in excess of the present statutory wages for 'A' and 'B' licence drivers. The chamber, therefore, opposes any further statutory control of the employees of their members engaged in driving motor vehicles, as carrying is only incidental to their business and they do not consider they are engaged in the transport industry as such."

The conclusions of the chamber were stated thus:—

1. That the wages and conditions of service of drivers of motor vehicles operating under "C" licences, which are, under present conditions, arranged through the trade or industry to which the drivers are attached, should continue to be so arranged.
2. That, as the right to collect and deliver goods is inherent in a trader's business, any interference with wages and conditions of service of "C" licence drivers would cause unwarranted hardships.
3. That, bearing in mind the exemption from control granted to the private carrier under the Road and Rail Traffic Act, 1933, after the most detailed investigations by the then Minister of Transport, who had also consulted the Minister of Labour, the chamber maintains that there is no ground for alteration in the existing legislation.

In reply to a question put by Sir James Ballie a representative of the chamber stated he would not admit that in many cases of "C" licence holders drivers were underpaid. The Chairman went on to say that the committee has information that wages are "conspicuously low" for certain drivers, partly because "C" licence holders are outside the fair wages conditions and can do as they like. The Chairman asked witness whether he considered it desirable that, subject to wages being determined by reference to the particular trade or industry, those wages should in some way be regulated. The reply given was to the effect that no objection would be offered to the adoption of such a course.

Coal Merchants' Federation.—The Coal Merchants' Federation gave evidence. The federation represents the retail distributive coal trade and covers 220 associations of coal merchants, representing the great bulk of the retail tonnage, and, whilst it supports the evidence given by the Associated Committee of "C" licence holders, it occupies a position somewhat different from that of most organisations representing retail ancillary users in that a large number of coal merchants and dealers are "B" licence holders. It was stated that figures are not available to show the precise number of coal merchants operating under "B" licences or of vehicles involved, but it was submitted that coal merchants and dealers constitute by far the largest single section of "B" licence holders.

The memorandum of evidence went on to state that "the Federation has emphasised its position as representing the largest single section of 'B' licence holders because most of the evidence already given on behalf of 'A' and 'B' licence holders, for example by the National Joint Conciliation Board, has been given on behalf of the professional haulage industry as such and does not cover the interests represented by the federation. The federation has no desire to embarrass the haulage industry in setting its house in order, but if hauliers desire to exchange the existing system of controlling wages through the fair wages condition for a more rigid system of enforcing specific rates and conditions by civil and criminal proceedings, it is important to ensure that the interests of 'B' licence holders operating in another trade are not thereby prejudiced. In view of the large number of owner-drivers in the coal trade who are unaffected by wages regulation, it fears that the application to coal merchants of a rigid statutory regulation of wages and conditions on the lines proposed by the National Joint Conciliation Board would merely have the effect of imposing different and arbitrary, although not necessarily higher, standards on the coal trade without offering the merchant who employs drivers any greater protection against undercutting by the owner-driver—particularly the owner-driver of the casual and itinerant type whose operations are becoming an increasing menace to the regular merchants and dealers."

The memorandum concluded by stating that "if effect is to be given to proposals of this nature, the decisions of the board—or of any body set up in its place—would acquire in themselves a statutory authority which they do not at present possess and it would, in the federation's view, become imperative that adequate safeguards should be provided for ensuring that the wages and conditions to be observed by coal merchants operating under 'B' licences are acceptable to the coal trade itself and suit its conditions of working. With this object in view, the federation would strongly recommend that it should be properly represented on any bodies, national or local, which in future may have statutory power, directly or indirectly, to prescribe, or to recommend for determination by the Government or some outside tribunal, either the standard of wages and conditions, or the actual wages and conditions, to be observed by coal merchants as a condition of their 'B' licences."

National Farmers' Union.—The peculiar position of farmers in relation to the problem under consideration by the Government Committee was pointed out in a memorandum put in by the National Farmers' Union. The union has a membership of 130,000 farmers throughout England and Wales. The memorandum criticised at length certain statements in the evidence recently given by the Associated Road Operators and then proceeded to emphasise that "the concession given to the farmer by way of the 'C' licence privilege of carrying goods for other farmers in the locality was given deliberately by the Government to assist the agricultural industry and to meet one of its special problems. In many agricultural areas at the present time there is a great dearth of 'A' and 'B' licensed vehicles, nor would it be financially worth while for persons to cater for the occasional or seasonal traffic in the district by means of 'A' and 'B' licensed vehicles. Having in mind this factor, the depressed state of agriculture and the inability of farmers generally to pay transport charges out of proportion to the value of the goods carried, the Government granted the privilege to be found in Section 1, Sub-section 5 (c), of the Road and Rail Traffic Act, 1933, and if this privilege is in any way interfered with the industry will receive a definite set-back."

The Government Committee will meet again in public on February 18.

G.W.R. Ambulance Presentation at Taunton

The Great Western Railway Staff Association dinner held at Deller's Café, Taunton, on January 30, was made the occasion for the presentation of ambulance awards to successful members of the Taunton class. The function was presided over by Mr. H. A. Alexander, Divisional Engineer, who was supported by the Mayor of Taunton, Councillor F. C. Spear; Mrs. Alexander; Mr. H. Adams-Clarke (Staff Assistant to the General Manager) and Mrs. Adams-Clarke; Mr. R. W. Higgins (Divisional Superintendent); Mr. A. W. H. Christison (Divisional Locomotive Superintendent); Mr. C. J. Challenger (District Goods Manager); Mr. H. A. Daman (late Divisional Engineer); Mr. C. A. Humphries (General Secretary of the Staff Association); and local officials. The toast of "The Staff Association and the First Aid Movement" was proposed by Mr. Higgins, who referred to the flourishing condition of ambulance work at Taunton.

Mr. Adams-Clarke, responding, spoke of the successes achieved by the Taunton branches of both the Staff Association and the first aid movement. Both organisations, he said, had much in common, and both worked unselfishly for the good of mankind.

Mr. Alexander referred to the coming of the railway in early days when the population of Taunton was 8,000. This was now betwen 25,000 and 30,000. Other speakers were the Mayor of Taunton, Mr. Daman, Mr. Christison, and Mr. Lloyd Davies, Chairman of the Taunton branch of the Staff Association. Some musical items were rendered during the evening. The presentation of examination awards to successful members of the Taunton ambulance class was made by Mr. Adams-Clarke, and included gold medals for 15 years' efficiency. The dinner was followed by a dance.

XUM

Questions in Parliament

Indian Railway Dispute

Mr. J. H. Jagger (Clayton—Lab.) on February 8 asked the Under Secretary of State for India (1) whether he would instruct the authorities in India to accede to the request of the organisation of the railwaymen involved in the Bengal-Nagpur Railway dispute to the company and to the Government for referring the dispute to an arbitration board or for appointing a board of inquiry as provided by the Indian Trades Disputes Act; and (2) whether he would make a statement in respect of the strike situation on the Bengal-Nagpur Railway.

Mr. G. Ridley (Clay Cross—Lab.) asked the Under Secretary of State for India whether he could give the House any information regarding the strike of railway workers on the Bengal-Nagpur Railway; how many men were involved in the strike; whether he was aware that the demand of the strikers for a court of inquiry into their grievances or for a board of conciliation under the Trades Disputes Act had been rejected by the railway administration and by the Government of India; and whether, as there was a likelihood of the strike spreading to other railways if the present situation was allowed to continue, he would advise the Government of India to institute a court of inquiry into the grievances of railway workers or, alternatively, to appoint a board of conciliation.

Mr. R. A. Butler (Under Secretary of State for India): A strike on the Bengal - Nagpur Railway began on December 13, arising out of the reduction of 27 men who were offered temporary employment in a lower grade pending their re-absorption in their original grade. This offer was refused and the men were consequently discharged. About 30,000 men became involved in the strike. Mail and passenger services have been fully maintained while goods services have varied from 50 to 80 per cent. of normal. The Government of India received a proposal on December 28 from Mr. V. V. Giri, the President of the union, that a board of conciliation should be appointed, but after careful consideration they came to the conclusion that no useful purpose would be served by taking this action or by appointing a Court of Inquiry.

Control of Transport

Mr. A. G. Walkden (Bristol, South—Lab.) on February 10 asked the Minister for the Co-ordination of Defence whether he had considered the advisability of promoting legislation to amend the Regulation of Forces Act, 1871, in such manner as would enable the Government immediately to take control of the means of transport by road, water, and air in the event of an impending outbreak of war, as was done with the railways on the night of August 4, 1914.

Sir Thomas Inskip (Minister for the Co-ordination of Defence): The question raised by the hon. member is at present engaging the attention of His Majesty's Government.

Parliamentary Notes

Railway and other Private Bills

The following Bills were read a second time in the House of Commons on February 8, and referred to the Examiners: Great Western Railway; London & North Eastern Railway; London Midland & Scottish Railway. On the same day the London Passenger Transport Board Bill was read a second time and committed. Twenty-nine petitions have been deposited against the London Transport Bill, including those by the Corporation of London, the County Councils of Middlesex and Hertfordshire, the Westminster City Council, the Borough Councils of Camberwell, Chelsea, Kensington, Poplar, St. Pancras, and Southwark, and the Harrow Urban District Council. Against the L.N.E.R. Bill there are eight petitions, including those from the Grand Union Canal Company, the River Trent Catchment Board, and the County Councils of Essex and Nottingham. Four petitions have been deposited against the L.M.S.R. Bill, including those of the West Riding County Council, and of the Corporations of Birmingham and Sheffield. Petitioners against the Southern Railway Bill number four, including the Bexhill and Chichester Corporations. Against the Great Western Railway Bill there are two petitioners, including the Dawlish Urban District Council. The North Staffordshire Road Transport Board Bill, which is to be read a second time in the House of Commons on February 15, has 11 petitions against it, including those of the G.W.R., L.M.S.R., and L.N.E.R.; of the North Western Road Car Company, the Milton Bus Service, the Omnibus Owners' Association, the Potteries Motor Traction Company, and the Congleton, Crewe, and Stafford Corporations.

Forthcoming Meetings

Feb. 24 (*Wed.*).—**Great Western Railway Company** (Annual General, followed by Special General [Wharncliffe]), Paddington Station, W.2, at 11.30 a.m.

Feb. 24 (*Wed.*).—**Great Northern Railway Company (Ireland)** (Ordinary Annual General), Gresham Hotel, Dublin, at noon.

Feb. 25 (*Thurs.*).—**Southern Railway Company** (Annual General, followed by Special General [Wharncliffe]), Southern House, Cannon Street, E.C., at 11.30 a.m.

Feb. 26 (*Fri.*).—**London Midland & Scottish Railway Company** (Annual General), Friends House, Euston Road, N.W., at 11.30 a.m.

March 2 (*Tues.*).—**London Midland & Scottish Railway Company** (Wharncliffe Rooms followed by Special General), Euston Station, N.W.1, at noon.

G.W.R. Chief Goods Manager's Dinner

This year's annual dinner of the Great Western Railway Chief Goods Manager's office made a break with tradition in having no speeches, except that Mr. Maynard, the Chief Goods Manager, who presided, took the opportunity which, as he said, this annual function gave him, of thanking all members of his staff for their good work throughout the past year. It had, he said, been a particularly difficult year, but, thanks to their loyal co-operation, and thanks also to the co-operation of the other departments of the railway, they had pulled through successfully. Mr. Maynard concluded by welcoming the guests, among whom he was very pleased to note a considerable number of retired members of the staff, as well as members of other departments.

The following notice appeared on the back of the menu:—

TO OUR VISITORS AND RETIRED MEMBERS.
"SPEECH IS SILVER—SILENCE IS GOLDEN."

Speechless we start and end our annual feast,
"But why," says you, "upon your front all quiet?"
Well, toast that's dry's unfit for man or beast,
And being too much buttered, sickly diet,
While toast that's dripping or is overdone,
Is oft *ad nauseam* and better left alone.

So saving breath and keeping good relations,
Also your minds on soup and fish and roast,
Nor hinder speechlessness from our libations,
We ask you to accept a silent toast;
Twix you and me, just friendly like, with tinkling glasses,
Or clanking cans with Worthington or Basses.

No more; true meaning; Friendly glances little heard;
Pray silence, Gentlemen, for mum's the word!

Among those present were:—

Sir Ralph Cope, Chief Accountant, Messrs. C. T. Cox, Divisional Superintendent, Paddington, F. C. A. Coventry, Superintendent of Road Transport, C. R. Dashwood, Assistant General Manager, M. J. M. Dewar, Publicity Officer, W. Elliott, General Manager, Pickfords Limited, H. T. Forth, Assistant Accountant, H. H. Cavendish Fuller, Chief Medical Officer, E. A. Glayzer, Staff and General Assistant to the Superintendent of the Line, F. C. Hockridge, Assistant Surveyor and Estate Agent, W. H. E. Humphrey, Horse Superintendent, W. H. Jarvis, Stationery Superintendent, F. W. Lampitt, Commercial Assistant to the Chief Goods Manager, J. F. Lean, Late Principal Assistant to the General Manager, D. R. Lamb, *Modern Transport*, A. Maynard, Chief Goods Manager, G. Matthews, Operating Assistant to the Superintendent of the Line, G. E. Orton, Commercial Assistant to the Superintendent of the Line, H. W. Payne, Principal Assistant to the Chief Goods Manager, A. G. Pollard, Assistant to the Chief Accountant, F. R. Potter, Superintendent of the Line, F. H. D. Page, Signal and Telegraph Engineer, P. G. Robinson, Assistant Manager, Hotels and Refreshment Rooms, F. W. Showers, Surveyor and Estate Agent, R. A. P. Setterfield, Manager, Hotels and Refreshment Rooms, F. P. Sealey, Manager, G.W.R. Royal Hotel, Paddington, H. Wheeler, Assistant to the General Manager, G. J. Walker, W. A. Willox, THE RAILWAY GAZETTE, and, J. R. C. Williams, Stationmaster, Paddington.

BELGIAN RAILWAY LOAN.—The Belgian Chamber, on February 9, adopted, by 163 votes to 7, a law providing for the repayment on March 15, 1937, of the Belgian railway loan for fr.225,000,000 issued in France in March, 1935.

RAILWAY AND OTHER REPORTS

Southern Railway.—The directors announce that there is an increase of £751,042 in the gross receipts for the year 1936, as compared with the previous year, and of £153,863 in the net revenue. In arriving at the net revenue the charges for rates and contributions to the Railway Freight Rebates Fund have been calculated on the revised basis. They have resolved to recommend the proprietors to declare the following dividends: A final dividend of 4 per cent. on the preferred ordinary stock, making, with the interim dividend of 1 per cent. already paid, 5 per cent. for the year; ½ per cent. for the whole year on the deferred ordinary stock. For the previous year no dividend was paid on the deferred stock. The balance carried forward is £220,809, compared with £225,875. It is intended to pay the dividends on Tuesday, March 2.

Great Western Railway.—The directors have decided to recommend payment of a dividend for the half year ended December 31 of £2 15s. per cent. on the consolidated ordinary stock, making £3 per cent. for the year, the same as a year ago. The increase in gross receipts of the railway and ancillary business for 1936 compared with 1935 was £974,411. The increase in gross expenditure amounted to £22,217 after allowing for the reduced liability in respect of rates and rate relief. The net revenue earned during the year amounted to £6,314,830, an increase of £864,271 which, with the balance of £44,373 brought forward from last year, amounts to £6,359,203. Dividends on the pre-ordinary stocks absorbed £4,994,517, leaving available for ordinary dividend £1,364,686. The balance carried forward is £76,794. There have been brought into the accounts the estimated amounts recoverable from rates and rate relief to December 31, 1935—£1,737,800, which has been transferred to the contingency fund which now stands at £3,252,679, compared with £1,514,577 at the beginning of the year. The dividend warrants will be posted on March 1.

London Midland & Scottish Railway.—The Secretary writes, February 10: "For the year 1936, the company's railway receipts increased by £2,805,000, railway working expenses by £1,690,000, receipts from all sources increased by £3,136,000, and the increases in total working expenses amounted to £2,115,000, making a net increase of £1,021,000, the net revenue being £14,048,000. With the balance of £135,000 brought forward from 1935, the amount available for interest and dividend on the company's stock is £14,183,000. As in 1935, the expenditure on rates and rate relief has been charged on the corrected rateable valuation. The remaining correction for earlier years is estimated at £3,180,000 and this amount has not been included in the above figures for 1936 but, as already intimated, will be brought to account in that year and allocated to reserves for maintenance and new works purposes which have been heavily drawn upon in recent years.

After meeting interest on the debenture stocks and the dividends on the guaranteed and preference stocks, amounting in total to £12,914,000 there is a balance of £1,269,000 and at a meeting of the board today it was decided, subject to final audit, to recommend the proprietors to declare a dividend on the ordinary stock of £1 5s. per cent., carrying forward £79,000. The warrants in respect of the dividends on the ordinary stock, together with those for the half-year ended December 31, 1936, on the guaranteed, 4 per cent. preference and 4 per cent. preference (1923) stocks, will be posted March 2."

Great Southern Railways.—The directors, at their meeting on February 5, decided to recommend the payment of the arrears of dividends on the 4 per cent. guaranteed preference stock for the year 1935. The directors further decided to recommend that a dividend at the rate of 4 per cent. per annum be paid on the 4 per cent. guaranteed preference stock for the year ended December 31, 1936. The directors regret that no profits are yet available for dividends on the preference and ordinary stocks of the company.

London Transport "C" Stock.—The London Passenger Transport Board announces that a payment on account of interest on its "C" stock for the financial year ending June 30 next will be made by the board's Registrar, the Bank of England, on March 24, to stockholders registered on February 26, 1937, at the rate of 1½ per cent. (less tax). A similar payment was made in March last year.

Canadian Pacific Railway.—Upon consideration of the results of the company's operations in 1936, and having in view its obligations as guarantor of the interest of certain securities of the Minneapolis, St. Paul, and Sault Ste. Marie Railway Company, the directors have declared a dividend from the earnings of 1936 of 1 per cent. on the preference stock, payable April 1, 1937, to shareholders of record on March 1, 1937. The year's earnings and therefore the rate of dividend on the preference stock have been affected by the very unfavourable drought conditions in the territory served by the company and also by the "Soo" line, which resulted in substantial curtailment of the earnings for the last quarter of the year.

Road Accidents

The following return for January of persons killed and injured in road accidents in Great Britain is the first of the monthly series now being issued by the Ministry of Transport, replacing the briefer weekly statistics which ceased with the week ended January 2 this year. Reference to the more detailed presentation of the road accident returns was made in an editorial note on page 129 of our issue of January 22.

January	Year	England	Wales	Scotland	Great Britain: Roads with speed limit	Great Britain: Roads without speed limit	Great Britain: Total
KILLED							
Pedestrians	1937	238	14	43	238	57	295
,,	*1936*	*209*	*12*	*35*	†	†	*256*
Motor drivers*	1937	24	—	1	7	18	25
Motor cyclists	,,	37	5	3	19	26	45
Pillion passengers	,,	4	—	—	—	4	4
Pedal cyclists	,,	100	2	7	61	48	109
Other persons	,,	33	4	6	25	18	43
All persons	1937	436	25	60	350	171	521
,, ,,	*1936*	*385*	*19*	*44*	†	†	*448*
SERIOUSLY INJURED							
Pedestrians	1937	1,293	55	161	1,244	265	1,509
Motor drivers*	,,	287	9	16	129	183	312
Motor cyclists	,,	359	20	13	213	179	392
Pillion passengers	,,	58	4	4	33	33	66
Pedal cyclists	,,	925	36	47	686	322	1,008
Other persons	,,	416	25	65	291	215	506
All persons	,,	3,338	149	306	2,596	1,197	3,793
All persons Slightly Injured	1937	9,130	340	818	8,131	2,157	10,288
TOTAL INJURED							
Pedestrians	1937	4,734	174	550	4,837	621	5,458
,,	*1936*	*4,676*	*173*	*538*	†	†	*5,387*
All persons	1937	12,468	489	1,124	10,727	3,354	14,081
,, ,,	*1936*	*12,211*	*450*	*1,135*	†	†	*13,796*

* Drivers of mechanically-propelled vehicles other than motor cycles. †Not available

NOTES AND NEWS

Delaware & Hudson Railroad.—In order to counteract prevalent rumours this company has officially denied that it has sold 10 per cent., or any part of the 495,000 shares in the New York Central which it acquired in 1932.

Great Southern Debenture Issue.—The directors of the Great Southern Railways Company (Ireland) have decided to issue at par £237,892 of 4 per cent. debenture stock, redeemable at par on April 1, 1942. This is the balance of the £637,892 of stock authorised in January 1936, of which £400,000 was issued forthwith.

L.N.E.R. Week-end Cruises.—The L.N.E.R. has arranged to run 12 week-end cruises this year. The ss. *Vienna* will leave Harwich every Friday night from June 25 to September 10 (inclusive) for various continental ports including Amsterdam, The Hague, Rotterdam, Hamburg, Antwerp, Flushing, Zeebrugge, Le Havre, and Rouen; there will also be a mystery cruise.

Through Iran-Caucasus Traffic.—The Iranian Government has sanctioned the recommendations of the Soviet-Iranian railway conference held in 1936, and from March 30 through rates and fares, through connections, and certain through goods facilities will be available between the Azerbayejan line of the Iranian Government and the Trans-Caucasian system of the U.S.S.R.

Nitrate Railways Company.—It is officially announced that although the provisional period of operation by the company of the Iquique-La Noria section of the railway expired on January 31, no definite arrangements have yet been made with the Chilean Government. Negotiations are, however, still proceeding, and the company is continuing to operate all its lines as hitherto.

Another L.N.E.R. Property Sale.—The L.N.E.R. has given orders to Messrs. Weatherall, Green & Smith, of Chancery Lane, states *The Times*, to dispose of the freehold, No. 58, Farringdon Road, between King's Cross and the City boundary. The building is exceptionally substantial and has a storage and office floor area of 21,000 sq. ft. The site is 6,500 sq. ft., and there is a loading dock. The auction is to take place on February 23 at the Mart.

The Sevillano Express Derailed by Boiler Explosion.—On February 7 the boiler of the engine hauling the Sevillano express exploded about a mile after it had left Tortosa Junction, on the Barcelona-Valencia main line, with the result that the locomotive was blown to pieces and two coaches were derailed and smashed. The driver, fireman, and another railwayman were killed and 16 passengers were injured, according to a Reuters message from Barcelona. Our Spanish correspondent recently indicated that the engines in that part of Spain were in none too good order due to the conditions under which the railways were being operated.

B.O.C. Welding Demonstrations.—The British Oxygen Co. Ltd. is this year arranging in all parts of the British Isles and Dominions where its organisation operates, demonstrations and lectures explaining the latest technique developed for different classes of work. The company will have a demonstration stand at the Birmingham section of the British Industries Fair.

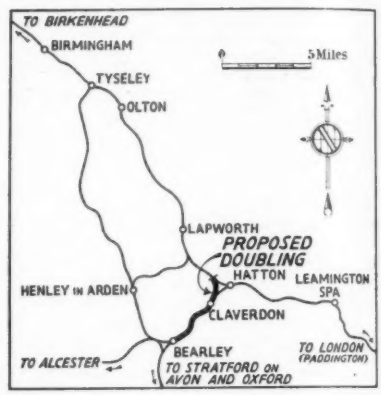
Subsidence on Southern Railway Brighton Line.—A subsidence between Burgess Hill and Hassocks on the up line of the Southern Railway Brighton main line occurred during the night of February 4. Both lines were closed for some time, but the down line was opened to traffic next day. Certain London-Brighton trains were cancelled on Friday and Saturday, and up trains were diverted via Lewes. Local passengers were conveyed by motorbus. Normal services were restored on Monday.

G.P.R. Proposed New Liners.—The Canadian Pacific Railway Company, according to Reuters, intends to construct two new Empress liners for the Pacific service if negotiations between Great Britain, Canada and Australia for a subsidy to permit of competition with American lines in the Australia and New Zealand service are successfully concluded. The construction of two 25-knot 30,000-ton vessels for such a subsidised Australian service has already been promised by the company.

Underground Lines for Prague Approved.—In the Overseas columns of our issue of February 9, 1934, we dealt with the proposed remodelling of the Prague suburban railway system, including an underground group of lines. The existing and proposed arrangements were illustrated by two maps. According to a Reuters message, plans have now been approved for three underground lines, totalling in all some 15 route-miles, to be constructed at a cost of £7,000,000. This move has apparently been made now so that the lines will be ready for traffic in time for the exhibition to be held in Prague in 1942.

New London Stations.—There are now two Highgate stations—the London Transport tube station and the L.N.E.R. station on the branch to High Barnet and Edgware. When the tube line is extended to High Barnet and Edgware it will pass under the L.N.E.R. Highgate station and a new deep level station will be provided communicating with the surface station by escalator. Therefore it has been decided to re-name as Archway the existing Highgate tube station. Finchley (Church End) is to become Finchley Central. On the Bakerloo extension and the Metropolitan Line north of Baker Street, St. John's Wood is to be Lords; Acacia Road has been adopted as the name of the new station at the intersection of Acacia Road and Wellington Road, which will replace the existing Marlborough Road station, and Northwick Park & Kenton, will become simply Northwick Park.

Doubling the G.W.R. Line between Hatton and Bearley.—In order to expedite the working of the increasing passenger and freight train traffic passing between the Midlands and South Wales, Bristol, and the West of England, the G.W.R. single line from Hatton (near Warwick) to Bearley (near Stratford-on-Avon) is to be doubled. The section is about 4½ miles long, and the



work will include widening five bridges over public roads, extending a public level-crossing, and removing some 27,000 cu. yards of spoil. In connection with the scheme, the up platform at Bearley is to be lengthened to 440 ft. and the down platform to 550 ft. Claverdon station is to be rebuilt on a new site about 150 yards nearer Bearley.

Diesel Engine Users Dinner.—On Wednesday last a representative gathering of engineers, manufacturers' representatives and users of heavy-oil engines enjoyed a very pleasant evening at the informal annual dinner of the Diesel Engine Users Association, under the chairmanship of Mr. T. Hornbuckle, B.Sc., A.M.Inst.C.E., the President of the Association, and Chief Technical Asssistant to the Chief Mechanical Engineer, L.M.S.R. After the loyal toast, Dr. S. F. Dorey, M.Inst.C.E., proposed the toast of "the Association," to which Mr. Hornbuckle replied. He pointed out that extensions of the field in which diesel engines are being used made the association more than ever necessary, and he saw a bright future for it now that marine, agricultural and railway authorities were becoming more than ever impressed by this prime-mover. Mr. Percy Still, M.I.E.E., one of the pioneers of the association and its Hon. Secretary for 14 years, proposed the toast of "Our Guests," to which Mr. Roylands Cooper replied.

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 5th Week			Totals to Date		
	1937	1936	Inc. or Dec.	1937	1936	Inc. or Dec.
L.M.S.R. (6,880¼ mls.)	£	£	£	£	£	£
Passenger-train traffic...	363,000	358,000	+ 5,000	1,821,000	1,803,000	+ 18,000
Merchandise, &c. ...	480,000	473,000	+ 7,000	2,337,000	2,261,000	+ 76,000
Coal and coke ...	297,000	286,000	+ 11,000	1,430,000	1,493,000	− 63,000
Goods-train traffic ...	777,000	759,000	+ 18,000	3,767,000	3,754,000	+ 13,000
Total receipts	1,140,000	1,117,000	+ 23,000	5,588,000	5,557,000	+ 31,000
L.N.E.R. (6,332 mls.)						
Passenger-train traffic...	246,000	244,000	+ 2,000	1,229,000	1,212,000	+ 17,000
Merchandise, &c. ...	300,000	309,000	− 9,000	1,582,000	1,576,000	+ 6,000
Coal and coke ...	257,000	272,000	− 15,000	1,296,000	1,379,000	− 83,000
Goods-train traffic ...	557,000	581,000	− 24,000	2,878,000	2,955,000	− 77,000
Total receipts	803,000	825,000	− 22,000	4,107,000	4,167,000	− 60,000
G.W.R. (3,738½ mls.)						
Passenger-train traffic...	153,000	149,000	+ 4,000	776,000	778,000	− 2,000
Merchandise, &c. ...	188,000	188,000	—	924,000	901,000	+ 23,000
Coal and coke ...	119,000	108,000	+ 11,000	584,000	601,000	− 17,000
Goods-train traffic ...	307,000	296,000	+ 11,000	1,508,000	1,502,000	+ 6,000
Total receipts	460,000	445,000	+ 15,000	2,284,000	2,280,000	+ 4,000
S.R. (2,153 mls.)						
Passenger-train traffic...	245,000	235,000	+ 10,000	1,238,000	1,200,000	+ 38,000
Merchandise, &c. ...	49,000	52,000	− 3,000	271,000	284,500	− 13,500
Coal and coke ...	27,000	32,000	− 5,000	170,000	200,500	− 30,500
Goods-train traffic ...	76,000	84,000	− 8,000	441,000	485,000	− 44,000
Total receipts	321,000	319,000	+ 2,000	1,679,000	1,685,000	− 6,000
Liverpool Overhead ... (6½ mls.)	1,104	1,136	− 32	5,961	5,887	+ 74
Mersey (4½ mls.) ...	4,080	4,010	+ 70	21,622	20,947	+ 675
*London Passenger Transport Board ...	558,000	528,600	+ 29,400	17,892,600	17,401,400	+ 491,200
IRELAND						
†Belfast & C.D. pass. (80 mls.)	1,559	1,693	− 134	8,607	9,574	− 967
,, ,, goods	503	516	− 13	2,368	2,746	− 378
,, ,, total	2,062	2,209	− 147	10,975	12,320	− 1,345
Great Northern pass. (543 mls.)	7,250	7,950	− 700	37,350	39,000	− 1,650
,, ,, goods	8,050	7,600	+ 450	44,500	48,150	− 3,650
,, ,, total	15,300	15,550	− 250	81,850	87,150	− 5,300
Great Southern pass. (2,075 mls.)	26,628	28,227	− 1,599	128,827	133,117	− 4,290
,, ,, goods	36,752	40,089	− 3,337	211,892	209,961	+ 1,931
,, ,, total	63,380	68,316	− 4,936	340,719	343,078	− 2,359

* 32nd week. † 6th week.

Forthcoming Events

Feb. 12 (*Fri.*).—Institute of Transport (Leeds Graduate), at City Transport Department, 7 p.m. "'Safety First' in Relation to Passenger Transport," by Mr. A. Scott.

Institute of Transport (Newcastle), at Royal Station Hotel, 7.30 p.m. "Some Aspects of the Road Traffic Acts," by Mr. F. Milton.

Institute of Transport (Newcastle Graduate), at Royal Station Hotel, 6 p.m. "Conveyance of Out-of-Gauge Loads," by Mr. T. Appleyard.

Feb. 13 (*Sat.*).—Permanent Way Institution (Manchester-Liverpool), at Victoria Station, Manchester, 3 p.m. "A Private Works Ganger," by Mr. R. Ryder.

Stephenson Locomotive Society (Midlands-Northern), at 4, Bury Old Road, Manchester, 6.30 p.m. "Some Geographical Studies of Railways," by Mr. S. Beaver.

Feb. 15-26.—British Industries Fair, at Olympia and White City, London, and Birmingham.

Feb. 15 (*Mon.*).—Engineers' German Circle, at Inst. of Mechanical Engineers, Storey's Gate, London, S.W.1, 6 p.m. "Supercharging Applied to Internal Combustion Engines, Boiler Furnaces and in the Chemical Industry," by Herr Dr. W. Noack.

G.W.R. (Birmingham) Lecture and Debating Society, at Great Western Hotel, Snow Hill Station, 6.30 p.m. "Power and Progress," by Mr. J. Ellett.

Institute of Transport (Scottish), at Grosvenor Restaurant, Gordon Street, Glasgow, 7.15 p.m. Debate: "That the Tendency towards Centralised Control of Transport is Welcomed." Affirmative: Mr. J. Hannay-Thompson. Negative: Mr. J. Hopkin.

Feb. 16 (*Tues.*).—Institute of Transport (London), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 6 p.m. "Transport in Germany," by Brig.-General Sir H. Osborne Mance, K.B.E.

Feb. 17 (*Wed.*).—Institute of Welding (Manchester), at College of Technology, 7.30 p.m. "Welding of Non-Ferrous Metals," by Mr. H. Hignett.

Institution of Civil Engineers, Great George Street, London, S.W.1, 6 p.m. "Co-ordination of the Chemical and Engineering Aspect of Water Supply, with Special Reference to Corrosion Problems," by Mr. G. Humphreys.

Royal Society of Arts, John Street, London, W.C.2, 8.15 p.m. "Recent Work on Wood-Destroying Insects," by Mr. R. Fisher.

Feb. 18 (*Thurs.*).—Institute of Transport (East Midlands), at Guildhall, Nottingham, 7 p.m. "A Continental Road Cruise," by Mr. E. Taylor.

Institute of Welding (Leeds), at Hotel Metropole, 7.30 p.m. "Machine Cutting by Gas," by Mr. C. Bainbridge.

Institution of Locomotive Engineers (Scottish), at Royal Technical College, George Street, Glasgow, 7.30 p.m. Annual General Meeting.

Railway Club, at Royal Scottish Corporation Hall, Fetter Lane, London, E.C.4, 7.30 p.m. "Railways at Law," by Mr. K. Brown.

British and Irish Railways Stocks and Shares

Stocks	Highest 1936	Lowest 1936	Prices Feb. 10. 1937	Prices Rise/Fall
G.W.R.				
Cons. Ord. ...	64¼	45½	63½	+1
5% Con. Prefce. ...	126½	116¾	122	−2
5% Red. Pref. (1950)	113	108½	111½	—
4% Deb.	119½	110½	109½	−½
4½% Deb.... ...	121	114	116½	—
4½% Deb.... ...	129	121	119½	−2
5% Deb.	141	134	130½	−2
2½% Deb.... ...	79⅛	74	75½	—
5% Rt. Charge ...	136½	130	129	−1
5% Cons. Guar. ...	135¼	127¾	128½	−1½
L.M.S.R.				
Ord.	35⅝	17	31½	−1
4% Prefce. (1923)	83	52½	79	−½
4% Prefce. ...	92¾	81	87	−1
5% Red. Pref. (1955)	109¼	103¼	107	—
4% Deb.	111¾	105 9/16	102½	−1
5% Red. Deb. (1952)	119⅝	115½	115½	—
4% Guar. ...	106¾	101⅝	98½*	−½
L.N.E.R.				
5% Pref. Ord. ...	14	9	10¾	−¾
Def. Ord.	7¼	4¾	5½	−⅛
4% First Prefce.	79¼	55¼	75	−1
4% Second Prefce.	31⅞	18¼	25	−1½
5% Red. Pref. (1935)	100½	77¾	99½	−½
4% First Guar. ...	104½	98¾	96½	−½
4% Second Guar.	99	90	92	−1
3% Deb.	85¾	79	78	−½
4% Deb.	109¾	104½	102	−1
5% Red. Deb. (1947)	116¼	110½	111½	−1
4½% Sinking Fund Red. Deb.	111½	107½	109	−½
SOUTHERN				
Pref. Ord.... ...	98¾	82½	98	—
Def. Ord.	27⅝	20⅛	24½	−2
5% Pref.	120¾	118½	120	−1½
5% Red. Pref. (1964)	119¾	115¼	117½	—
5% Guar. Prefce.	136	129½	129	−1
5% Red. Guar. Pref. (1957)	120	115¾	116½	−1
4% Deb.	117 16/16	109½	107½	−½
5% Deb.	140	134	130½	−1
4% Red. Deb. 1962–67	116½	110	111	−½
BELFAST & C.D.				
Ord.	9	4½	5	—
FORTH BRIDGE				
4% Deb.	107	105	104½	—
4% Guar. ...	107 3/16	104	104½	—
G. NORTHERN (IRELAND)				
Ord.	19½	9¾	10	—
G. SOUTHERN (IRELAND)				
Ord.	63	41	49½	—
Prefce.	65	46	58	−2
Guar.	97¼	81	91	−3½
Deb.	99¾	83¼	91	−2
L.P.T.B.				
4½% "A" ...	127¾	121	119½	−1
5% "A"	138¼	133½	129½	−1
4½% "T.F.A." ...	111½	108⅛	107	—
5% "B"	131¾	123¾	120½	−1
"C"	112½	93	97	—
MERSEY				
Ord.	40¾	23	37½	−2
4% Perp. Deb. ...	103	98	100	—
3% Perp. Deb. ...	78	74⅝	76½	—
3% Perp. Prefce.	68⅞	63¼	67½	—

* ex dividend

CONTRACTS AND TENDERS

Charles Roberts & Co. Ltd. has received an order from the Sudan Government Railways for two bogie tank wagons.

The Gaekwar's Baroda State Railways Administration has placed orders to the inspection of Messrs. Rendel, Palmer & Tritton with Surhammas Bruks A/B for 300 wagon axles, and with Carters Merchants Limited on behalf of Skoda Works for 600 wagon tyres.

George Turton Platts & Co. Ltd. has received an order from the South Indian Railway Administration, to the inspection of Messrs. Robert White & Partners, for 150,000 Stuart's sleeper clamps.

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received an order from the Leopoldina Railway for 10 coach bogies required for the construction of coaches overseas.

The Royal Hungarian State Iron, Steel, & Machine Works has received an order through Shaw, Wallace & Co. for six saturated locomotive boilers, required for Y7 B.G. locomotives, Great Indian Peninsula Railway.

The A.1 Electric Welding Appliances Company has received a contract, worth approximately £10,000, for the supply of automatic flash-butt welding plant from the London Passenger Transport Board. The plant is for the welding of rails on the London underground railways in connection with the scheme to reduce noise. This plant is that referred to in an editorial note appearing on page 223 of last week's issue of THE RAILWAY GAZETTE.

Guest, Keen & Nettlefolds Limited has received an order for 105,000 steel fishbolts and nuts from the Argentine North Eastern Railway.

Stewarts and Lloyds Limited has received an order for 800 solid drawn steel superheater smoke tubes from the Central Argentine Railway.

The South African Railways & Harbours Administration has placed orders for a total of 20 Class 23 4-8-2 locomotives, of which Henschel & Sohn is to supply 13 at a total price reported to be £117,185 and Berliner Machinenbau A.G. the remaining seven at a total price of £62,475.

Tubes Limited has received an order for 1,175 steel boiler tubes and superheater smoke tubes, all in their rust-resisting quality, from the Antofagasta (Chili) and Bolivia Railway.

The Indian Stores Department, New Delhi, has placed running contracts for the supply of grinding wheels to the East Indian and North Western Railways with Alfred Herbert (India) Limited, the Asbestos & Belting Co. Ltd., and William Jacks & Co.; and with Burn & Co. Ltd. for the supply of grinding wheels to the North Western Railway.

Clifton & Baird Limited has received from the Central Argentine Railway an order for one saw and drilling machine for use in connection with rail welding plant.

Robert Stephenson & Co. Ltd. has received an order from the Madras & Southern Mahratta Railway Administration for 16 locomotive frame plates and four drag castings to be supplied to the inspection of Messrs. Rendel, Palmer & Tritton.

W. G. Bagnall & Co. Ltd. has received an order through Greaves, Cotton & Co. Ltd. for the supply of two saturated locomotive boilers, required for type A3 N.G. locomotives, Great Indian Peninsula Railway.

The Egyptian State Railways Administration has recently placed the following orders :—

Uddeholms Aktiebolag and Stewart and Lloyds Limited, smoke tubes.

Siemens Electric Lamps and Supplies Limited, electric switchboard lamps.

N.V. Montan Export, locomotive carriage and wagon tyres.

J. Baker & Bessemer Limited has received an order from the Central Argentine Railway for 150 steel locomotive tyres.

Tenders are invited by the North Western Railway of India, receivable at the office of the Agent by March 5, for the supply of 16,000 steel sleepers B.G. for 90 R. and B.S.S. rails.

U.S.S.R. Orders Placed in Great Britain

Orders placed in Great Britain in 1936 amounted to £12,658,098, which represents a 26·9 per cent. increase over 1935, when the total was £9,977,673. A considerable proportion of the orders was placed in December, when the total was £2,825,203, as compared with £846,763 in December, 1935. The following table shows the principal orders placed for engineering and allied materials and the articles purchased in the period under consideration :—

	Dec., 1935	Dec., 1936
	£	£
Machinery and equipment	270,240	1,819,368
Ferrous alloys and steel	106,373	40,552
Non-ferrous metals ...	142,431	275,985
Rubber	30,039	192,845
	Jan.–Dec., 1935	Jan.–Dec., 1936
	£	£
Machinery and equipment	2,118,927	2,355,093
Ferrous alloys and steel	812,993	601,985
Non-ferrous metals ...	2,747,246	3,496,279
Rubber	949,381	2,334,535

Orders for machinery and equipment amounted in 1936 to £2,355,093. A particularly large increase took place in the purchase of rubber and textile raw materials, and some increase also took place in the purchase of chemicals. On the other hand the orders for ferrous metals show a decrease. The orders for miscellaneous goods, which include various consumers' goods, have increased by 51 per cent.

Craven's Railway Carriage & Wagon Co. Ltd. has received an order from the Leopoldina Railway for six underframes for 20-ton bogie open wagons.

The New Zealand Government has placed a contract with the British General Electric Co. Ltd., of Wellington, for over 130 G.E.C. floodlights for use with various coloured Osira lamps, the total value of the contract being over £3,500. These floodlights are to be used for illuminating the main Government buildings and the railway stations in Auckland, Wellington, and Christchurch. This is believed to be the largest single order for electric discharge floodlighting equipment yet placed in any part of the world.

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Engineering Section), New Delhi, receivable by March 4, for the supply of one self-contained railway wagon weighbridge fitted with self-indicating dial and to weigh up to 60 tons.

The Public Works Department, Pretoria, is calling for tenders, to be presented in Pretoria, South Africa, by March 12, for the supply of two locomotive-type boilers, two automatic stokers complete with controls, firebricks, and feed pumps for Durban. Firms desirous of offering equipment of United Kingdom manufacture can obtain further details from the Department of Overseas Trade.

A complete mill for rolling hot and cold strip and tinplate is to be installed by Richard Thomas & Co. Ltd., at Ebbw Vale. This company has divided the order for the necessary equipment between certain prominent British firms, and an important section of the plant will be manufactured by the General Electric Co. Ltd. At the Fraser & Chalmers engineering works, the G.E.C. will produce approximately 3,000 tons of mechanical plant to drawings supplied by the United Engineering Company of America. This machinery will consist of the cold rolling section of the scheme, which includes three skin pass mills (comprising six housings, each of 56 tons), shearing line, and a number of coilers, de-coilers, shears, tensioning device and all auxiliary apparatus in connection with the manufacture of cold roll sheet and tinplate. The electrical equipment, which is being manufactured at the G.E.C. Witton engineering works, Birmingham, includes the motors for the cold strip mill, of which the most important are three direct-current machines, each of 1,500-h.p. output. These, together with a 400-h.p. d.c. motor, are supplied from a 3,500-kW. synchronous Ward Leonard set. In addition, the electrical plant to be built at Witton includes a number of motors for the continuous hot strip mill, motor control gear, three 2,000-kVA. transformers, two 11,000 volt remote electrically controlled metalclad switchboards—one of 17 panels and the other of 10 panels—and over 100 direct-current reversible steelworks motors for driving mill auxiliaries.

LEGAL AND OFFICIAL NOTICES

In the Court of the Railway Rates Tribunal.

Road and Rail Traffic Act, 1933

Agreed Charges

NOTICE IS HEREBY GIVEN that Applications for the approval of Agreed Charges under the provisions of Section 37 of the Road and Rail Traffic Act, 1933, short particulars of which are set out in the Schedule hereto, have been lodged with the Railway Rates Tribunal.

The Procedure to be followed in regard to the inspection of the said Applications and the filing of Notices of Objections is that published in the "London Gazette" of 28th July, 1936.

Printed copies of the Procedure can be obtained from the Railway Rates Tribunal, Bush House, Aldwych, London, W.C.2.

Notices of Objection to any of the said Applications must be filed on or before the 5th day of March, 1937.

A copy of each Application can be obtained from Mr. G. Cole Deacon, Secretary, Rates and Charges Committee, 35, Parliament Street, Westminster, London, S.W.1, price 1s., post free.

T. J. D. ATKINSON,
Registrar.

9th February, 1937.

Number of Application	Name of Trader and General Description of Traffic
1937—No. 81	GREENGATE & IRWELL RUBBER CO. LTD., Irwell Works, Ordsall Lane, Salford, Manchester; Waterproof and Showerproof Coats, Light Electric Cable, Belting, Rubber Goods, Gaiters, Leggings and Slippers, Ebonite Sheets and Cylinders.
1937—No. 82	ROBERT LAWSON & SONS (DYCE) LTD., Dyce, Aberdeenshire; Cooked Meats, Sausages, Lard and Dripping.
1937—No. 83	LAWLEYS LIMITED, 36, Golden Square, London, W.1; Earthenware.
1937—No. 84	THOMAS HEDLEY & CO. LTD., Phœnix Buildings, Collingwood Street, Newcastle-on-Tyne; Soap and Candles.
1937—No. 86	LILLEY & SKINNER LIMITED, King's Cross, London, N.1; Boots and Shoes, Hosiery, etc.
1937—No. 91	W. BARRATT & CO. LTD., Footshape Works, Northampton; Boots, Shoes, &c.
1937—No. 92	COLEMAN & CO. LTD., Wincarnis Works, Norwich; "Vitacup," Jellies and Beef Cubes.
1937—No. 93	JOHN KIDD & CO. LTD., 10 and 11, Wine Office Court, Fleet Street, London, E.C.4; Printing Ink, Methylated Spirit Ink, Rollers, Linseed Oil, Caustic Potash, Glue Composition, Bronze Powder, &c.
1937—No. 94	E. MILES & CO., The Bacon Factory, West Street, Bristol, 2; Bacon, Cheese, Hams, Lard and Meat.
1937—No. 95	UNITED WALLPAPERS LIMITED, Dundee Road, Trading Estate, Slough; Paper Hangings.
1937—No. 96	THE STAR POLISH CO. (BIRMINGHAM) LTD., 89, Cornwall Street, Birmingham; Boot, Floor and Metal Polish, Scouring Powder, Bath Crystals, Perfumes, Toilet Requisites. (*Applicable also to traffic consigned by one Associated or Subsidiary Company.*)
1937—No. 97	EUGENE LIMITED, Eugene Works, Edgware Road, Hendon, N.W.9; Hair Drying and Hair Waving Machinery, Hair Lotions, Papier Sachets, &c.
1937—No. 98	MOULDS & MOORE LIMITED, Barwell, Leicester; Boots and Shoes, &c.
1937—No. 99	PEARCE DUFF & CO. LTD., Spa Road, London, S.E.16; Groceries and Preserves, Confectionery, Sulphate of Magnesia, &c.
1937—No. 100	THE PRUDENTIAL ASSURANCE CO. LTD., Holborn Bars, London, E.C.1; Printed Matter, Stationery, Furniture, Office Equipment and Cleaning Materials, Cigars and Cigarettes, &c.
1937—No. 101	THE WASHINGTON CHEMICAL COMPANY, Branch of Turner & Newall Limited, Washington, Durham; Insulating Material, Insulating Accessories, Magnesia.
1937—No. 102	J. H. BISHOP, Haverfordwest; Rabbits (dead).
1937—No. 103	BROOK TAVERNER & CO., Northumberland Street, Huddersfield; Woollen Goods and Pattern Books.
1937—No. 104	HARRODS LIMITED, Knightsbridge, London, S.W.1; Clothing, Drapery and General Stores Wares.
1937—No. 105	HOLLOWAY BROS. LTD., Stroud, Glos.; Clothing, &c.
1937—No. 106	KEARLEY & TONGE LIMITED, Mitre Square, London, E.C.3; Cooked Meats, Brawn and Sausages.
1937—No. 107	A. KIRKPATRICK & SONS LTD., Thornhill, Dumfriesshire; Bacon, Cooked and Preserved Meats, Fat, Hams, Lard, Offals, Puddings and Sausages.
1937—No. 108	MARSHALL FABRICS LIMITED, 17, Minshull Street, Manchester; Dress Materials, Household and Soft Furnishings and Piece Goods.
1937—No. 109	I. & R. MORLEY LIMITED, 18, Wood Street, London, E.C.2; Gloves Hosiery and Textiles.
1937—No. 110	THE NOTTS HOSIERY CO. LTD., 44 and 44a, Gutter Lane, Cheapside, London, E.C.2; Hosiery.
1937—No. 111	VITACREAM LIMITED, 48, Mark Lane, London, E.C.3; Butter Flavour, Chocolate coverture, Egg-Whites, Vitacream, Vitacurd, Vitafil, Vitafond, Vitag, Vitagell, Vitaglyce and Vitamel.
1937—No. 112	T. WALL & SONS LTD., The Friary, Action, London, W.3; Sausages, Cooked Meat, Meat Pies, Lard, Potted Meat and Pastes.
1937—No. 113	W. G. WHITE & CO., 7, Love Lane, Wood Street, London, E.C.2; Clothing, Hosiery and Textiles.
1937—No. 114	CROSSE & BLACKWELL LIMITED, Soho Square, London, W.1; Confectionery, Pickles and Sauces, Preserves and Provisions, &c. (*Applicable also to traffic consigned by three Associated or Subsidiary Companies.*)
1937—No. 115	CROSSE & BLACKWELL LIMITED, Soho Square, London, W.1; Confectionery, Pickles and Sauces, Preserves and Provisions, etc. (*Applicable also to traffic consigned by eight Associated or Subsidiary Companies.*)
1937—No. 116	J. HENRY BROOKE LIMITED, 19-25, Nile Street, London, N.1; Clothing.
1937—No. 117	HIGGINS, EAGLE & CO. LTD., 4 and 6, Cannon Street, London, E.C.4; Clothing, Drapery, Gloves, Hosiery and Textiles.
1937—No. 118	KAYS (MANCHESTER) LIMITED, 57, Dale Street, Manchester; Costumes, Gowns and Mantles.
1937—No. 119	E. C. MIDGLEY & SONS LTD., Black Prince House, Wellington Street, Leeds, 1; Boots and Shoes.
1937—No 120	READICUT WOOL CO. LTD., Terry Mills, Ossett; Woollen Goods, &c

Great Western Railway Company

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the Proprietors of this Company will be held in London, at Paddington Station, on Wednesday, the 24th day of February, 1937, at Half past Eleven o'clock in the morning, for the general purposes of business.

AND NOTICE IS HEREBY ALSO GIVEN that a Special General Meeting of the Proprietors will be held at Paddington Station on the same day at Twelve o'clock Noon—or as soon thereafter as the said Annual General Meeting is concluded or adjourned—when the following Bill will be submitted for the consideration and, if thought fit, for the approval of such meeting, viz.:—

"A Bill for conferring further powers upon the Great Western Railway Company in respect of their own undertaking and upon that Company and the London Midland & Scottish Railway Company in respect of an undertaking in which they are jointly interested and upon the Great Western and Great Central Railways Joint Committee and for other purposes."

R. S. HORNE,
Chairman.
F. R. E. DAVIS,
Secretary.

Paddington Station,
London, W.2.
8th February, 1937.

Southern Railway Company

NOTICE IS HEREBY GIVEN that the next Annual General Meeting of the Southern Railway Company will be held at Southern House, Cannon Street Station, in the City of London, on Thursday, the Twenty-fifth day of February, 1937, at 11.30 a.m., for the purpose of receiving the accounts for the past year and transacting general business.

L. F. S. DAWES,
Secretary.

Waterloo Station,
London.
8th February, 1937.

London Midland & Scottish Railway Company

NOTICE IS HEREBY GIVEN that the Ordinary General Meeting of the London Midland & Scottish Railway Company will be held at Friends House, Euston Road, London, N.W., on Friday, the 26th February, 1937, at 11.30 a.m. precisely, for the transaction of the general business of the Company.

JOSIAH CHARLES STAMP,
Chairman.
OWEN GLYNNE ROBERTS,
Secretary.

Euston Station,
London, N.W.1.
11th February, 1937.

London Midland & Scottish Railway Company

NOTICE IS HEREBY GIVEN that a Special General Meeting of the London Midland & Scottish Railway Company will be held at Euston Station, London, N.W.1, at the conclusion of the Wharncliffe Meeting to be convened for 12 o'clock Noon on Tuesday, the 2nd day of March, 1937, for the purpose of considering and (if thought fit) authorising and approving the proposed application by the Company to the Minister of Transport under Section 45 of the Railway and Canal Traffic Act, 1888, as amended by the Ministry of Transport Act, 1919, and the Orders in Council made thereunder, for a Warrant authorising the abandonment of the undermentioned portions of the Manchester, Bolton and Bury Canal extending from a point in the vicinity of the Clifton Aqueduct to Bailey Bridge, and, if found desirable, from Bailey Bridge to Bury; also the whole of the branch of the Manchester, Bolton and Bury Canal from Prestolee Locks to Bolton; the portion of the Cromford Canal from its westerly terminus at Cromford to the westerly end of the Butterley Tunnel, and the portion of the Welsh Section of the Shropshire Union Canal extending from its terminus at Newtown in the County of Montgomery to Frankton in the County of Salop, and also for an Order releasing the Company from all liability to maintain such portions of the beforementioned Canals and from all Statutory and other obligations in respect thereof or consequent on the abandonment thereof.

JOSIAH CHARLES STAMP,
Chairman.
OWEN GLYNNE ROBERTS,
Secretary.

Euston Station,
London, N.W.1.
11th February, 1937.

THE MADRAS & SOUTHERN MAHRATTA RAILWAY COMPANY LIMITED invite Tenders for:—

(*a*) 13 BOILERS FOR LOCOMOTIVES, viz.:

8 for 4-8-0 Locomotives "GS" type
2 for 4-6-0 Locomotives "MS" type
2 for 4-6-0 Locomotives "MHS" type
} Metre Gauge.

1 for 4-6-2 Locomotives "XB" type—Broad Gauge.

(*b*) FOUR LOCOMOTIVE ENGINES AND TENDERS, 2-8-2 Light Goods ("XD") type—Broad Gauge.

Specifications and Forms of Tender can be obtained at the Company's Offices, 25, Buckingham Palace Road, Westminster, S.W.1.

Fee ONE GUINEA each (*a*) and (*b*), *which will not be returned.*

Tenders must be submitted not later than 2 o'clock p.m. on TUESDAY, 9TH MARCH, 1937.

The Directors do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of reducing or dividing the orders.

By Order of the Board,
G. W. V. DE RHE PHILIPE,
Secretary.

Railway Share Market

Sentiment in the stock and share markets was affected at one time by the renewal of an easier tendency in British Government stocks, but active conditions have ruled. Apart from Great Western Ordinary the junior stocks of the Home Railways have not responded to the very satisfactory dividend statements made this week. As is often the case after dividend decisions are announced, speculative interest tends to diminish. Moreover, at the moment the tendency in the market is to emphasise the higher price of coal and the possibility of a further increase in the wages bill. As against these factors it has to be borne in mind that further recovery in trade conditions is expected during the ensuing twelve months and that the general outlook still appears quite promising.

L.M.S.R. reacted moderately to 31½ following the announcement of the resumption of dividends with a payment of 1¼ per cent., and the 4 per cent. preference and 1923 preference failed to improve, despite the increased cover for their dividends indicated by the preliminary figures. Southern deferred has gone back rather sharply to 24⅝ since the announcement of the ½ per cent. with which this stock re-enters the dividend list. Some comments on the preliminary statement suggested that a larger dividend had been hoped for, but having regard to the published traffic figures for the past year it is difficult to say on what this could have been based, unless the assumption was that a special payment might be forthcoming from sums receivable in respect of excess local rates. Southern preferred is fractionally lower at 98 and the yield appears attractive, particularly as it is reasonable to suppose that further progress will be made this year. L.N.E.R. stocks were fairly steady, awaiting next week's dividend statement. Great Western were active up to 63¾ on the preliminary figures. The increase in net revenue exceeded expectations and the 3 per cent. dividend will on this occasion not necessitate any withdrawal from reserves or undivided profits. The increase of £15,000 in the railway's traffic receipts for the past week also created a good impression.

Argentine railway stocks were rather more active owing to the traffic figures. B.A. Gt. Southern and Central Argentine ordinary and preference were favoured. Elsewhere, Canadian Pacific failed to benefit from the resumption of dividends on the preference stock, a larger payment than 1 per cent. having been expected in some quarters.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1936-37	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1936	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1936	Prices: Lowest 1936	Prices: Feb. 10, 1937	Yield % (See Note)
				£	£		£	£	£					
South & Central America.	Antofagasta (Chili) & Bolivia	834	7.2.37	14,810	— 940	6	81,150	86,210	— 5,060	Ord. Stk.	25	15¼	26½	Nil
	Argentine North Eastern	753	6.2.37	7,959	+ 290	32	286,618	251,201	+ 35,417	,,	12	2	15	Nil
	Argentine Transandine	—	—	—	—	—	—	—	—	A. Deb.	54	45	90	4 7/16
	Bolivar	174	Jan., 1937	5,400	— 100	5	5,400	5,500	— 100	6 p.c. Deb.	9	5	7½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	16	11½	16½	3
	Buenos Ayres & Pacific	2,806	6.2.37	116,005	+ 18,530	32	2,668,715	2,491,466	+ 177,249	Ord. Stk.	17½	6	16½	Nil
	Buenos Ayres Central	190	23.1.37	$153,800	+ $58,800	30	$4,330,000	$3,549,800	+ $780,200	Mt. Deb.	31½	11	39½	Nil
	Buenos Ayres Gt. Southern	5,084	6.2.37	249,876	+ 80,234	32	4,291,147	4,002,328	+ 288,819	Ord. Stk.	31⅝	13⅝	34½	Nil
	Buenos Ayres Western	1,930	6.2.37	61,476	+ 12,327	32	1,488,353	1,372,330	+ 116,023	,,	29⅝	11	30	Nil
	Central Argentine	3,700	6.2.37	186,318	+ 54,539	32	4,691,355	3,856,992	+ 834,363	,,	32 9/32	8¾	31½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	21	4½	18	Nil
	Cent. Uruguay of M. Video	273	30.1.37	14,364	+ 832	31	382,779	317,459	+ 65,320	Ord. Stk.	7⅝	3	11½	Nil
	Do. Eastern Extn.	311	30.1.37	2,893	— 50	31	68,035	58,747	+ 7,348	—	—	—	—	—
	Do. Northern Extn.	185	30.1.37	1,875	+ 327	31	44,655	41,712	+ 2,943	—	—	—	—	—
	Do. Western Extn.	211	30.1.37	1,403	+ 189	31	30,613	26,431	+ 4,182	—	—	—	—	—
	Cordoba Central	1,218	6.2.37	31,270	+ 6,370	3	1,036,100	937,250	+ 98,850	Ord. Inc.	5	1	5½	Nil
	Costa Rica	188	Dec., 1936	19,353	+ 7,331	26	110,934	80,721	+ 30,213	Stk.	36½	32	36	5 9/16
	Dorada	70	Dec., 1936	17,400	+ 3,400	52	173,900	144,700	+ 29,200	1 Mt. Db.	107	101½	104½	5⅝
	Entre Rios	810	6.2.37	15,279	+ 4,516	32	423,193	358,799	+ 64,394	Ord. Stk.	17	6	17	Nil
	Great Western of Brazil	1,082	6.2.37	10,000	— 600	6	52,500	59,000	— 6,500	Ord. Sh.	1/2	5/16	5/8	Nil
	International of Cl. Amer.	794	Dec., 1936	$461,490	+ $2,875	52	$5,112,141	$4,717,456	+ $394,685	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Prof.	1/2	-/6	1/2	Nil
	La Guaira & Caracas	22§	Jan., 1937	6,270	+ 1,845	5	6,270	4,425	+ 1,845	Stk.	9	3	7½	Nil
	Leopoldina	1,918	6.2.37	25,600	+ 6,677	6	119,720	105,421	+ 14,299	Ord. Stk.	10½	3½	8	Nil
	Mexican	483	31.1.37	$442,100	+ $81,900	5	$1,279,700	$1,077,000	+ $202,700	,,	1¼	1/4	1	Nil
	Midland of Uruguay	319	Dec., 1936	8,764	+ 814	26	49,941	39,314	+ 10,627	,,	1½	1/8	1/2	Nil
	Nitrate	397	31.1.37	5,294	— 3,814	5	12,075	19,059	— 6,984	Ord. Sh.	63/6	41/9	21 1/16	Nil
	Paraguay Central	274	6.2.37	$2,807,000	+ $403,000	32	$84,444,000	$72,163,000	+ $12,281,000	Pr. Li. Stk.	85	71	81	7
	Peruvian Corporation	1,059	Jan., 1937	79,801	— 3,318	31	570,586	537,416	+ 33,170	Pref.	15	9	13	Nil
	Salvador	100	30.1.37	¢45,250	+ ¢14,450	31	¢550,258	¢513,496	+ ¢36,762	Pr. Li.Db.	18	16	22½	Nil
	San Paulo	153½	31.1.37	30,875	— 2,146	5	136,653	140,195	— 3,542	Ord. Stk.	86	46½	87½	2
	Taltal	164	Jan., 1937	3,590	+ 375	31	24,490	23,915	+ 575	Ord. Sh.	1 15/32	14/-	11¼	8
	United of Havana	1,353	6.2.37	44,664	+ 3,916	32	565,313	539,384	+ 25,929	Ord. Stk.	31⅛	1	4½	Nil
	Uruguay Northern	73	Dec., 1936	1,442	+ 327	26	6,481	4,830	+ 1,651	Deb. Stk.	5	3	8	Nil
Canada.	Canadian National	23,564	31.1.37	916,679	+ 76,212	5	2,808,670	2,548,511	+ 260,159	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	76	51	76½	5¼
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	104⅝	99⅝	100½	4
	Canadian Pacific	17,223	31.1.37	650,400	+ 30,000	5	2,038,800	1,864,800	+ 174,000	Ord. Stk.	16⅜	10 15/16	17	Nil
India.†	Assam Bengal	1,329	20.1.37	43,530	+ 5,268	41	1,065,722	1,018,684	+ 57,038	Ord. Stk.	87⅝	82⅛	83½	3 9/16
	Barsi Light	202	10.1.37	2,917	— 1,260	40	90,083	110,805	— 20,722	Ord. Sh.	77½	65½	64½	7⅝
	Bengal & North Western	2,107	20.1.37	84,462	+ 1,004	15	856,852	806,098	+ 50,754	Ord. Stk.	319	292⅝	313	5⅝
	Bengal Dooars & Extension	161	20.1.37	3,214	— 751	41	107,734	114,779	— 7,045	,,	127½	118	114½	5⅛
	Bengal-Nagpur	3,268	20.1.37	161,475	— 9,086	41	4,760,332	5,137,326	— 376,994	,,	104	100¼	100½	4
	Bombay, Baroda & Cl. India	3,072	31.1.37	337,175	+ 66,825	43	7,203,300	6,769,050	+ 434,250	,,	114	110½	110½	5 7/16
	Madras& Southern Mahratta	3,229	20.1.37	174,225	+ 31,567	41	4,481,168	4,300,815	+ 180,353	,,	116½	108½	109½	7 5/16
	Rohilkund & Kumaon	572	20.1.37	18,906	+ 1 355	15	158,418	151,016	+ 7,402	,,	311	286	311	5 15/16
	South Indian	2,532	20.1.37	109,465	+ 6,825	41	3,232,376	3,175,033	+ 57,343	,,	107½	102 5/16	101½	5 7/16
Various.	Beira-Umtali	204	Nov., 1936	68,789	+ 4,610	9	137,294	129,926	+ 7,368	—	—	—	—	—
	Bilbao River & Cantabrian	15	Dec., 1936	1,128	— 388	52	16,077	18,470	— 2,393	—	—	—	—	—
	Egyptian Delta	620	20.1.37	7,537	+ 215	41	206,078	205,213	+ 865	Prf. Sh.	21¼	15⅜	15	Nil
	Great Southern of Spain	104	29.8.36	568	— 2,514	35	33,629	62,623	— 28,994	Inc. Deb.	11/2	1/3	3½	Nil
	Kenya & Uganda	1,625	Dec., 1936	207,131	+ 8,585	52	2,526,328	2,384,923	+ 141,405	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	50½	37	46	7⅝
	Mashonaland	913	Nov., 1936	120,282	+ 18,563	9	245,549	213,702	+ 31,847	1 Mg. Db.	101½	101 5/16	107	4 11/16
	Midland of W. Australia	277	Dec., 1936	14,803	— 39	26	82,053	83,623	— 1,570	Inc. Deb.	97	93½	96	4⅛
	Nigerian	1,905	19.12.36	67,927	— 5,291	38	1,576,260	1,267,583	+ 308,677	—	—	—	—	—
	Rhodesia	1,538	Nov., 1936	213,377	+ 25,550	9	443,341	390,521	+ 52,820	4 p.c. Db.	107	103½	109	3 11/16
	South Africa	13,263	16.1.37	622,079	+ 24,954	42	25,570,760	23,714,820	+ 1,855,940	—	—	—	—	—
	Victoria	4,728	Sept., 1936	790,314	+ 984	13	2,242,629	2,238,853	+ 3,776	—	—	—	—	—
	Zafra & Huelva	112	Nov., 1936	16,703	+ 6,796	48	97,316	124,029	— 26,713	—	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1/16.

† Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. Salvador and Paraguay Central receipts are in currency.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements from July 1 onwards are based on the current rates of exchange and not on the par value.